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ABSTRACT

This book examines the growing epidemic of children born to mothers who use cocaine, particularly the highly addictive version known as "crack," focusing on the health and educational needs of such children. Nine chapters address: (1) the origins of cocaine use in the United States, as well as the chemical properties and physiological effects of the drug; (2) the emergence of crack cocaine in the 1980s and the psychological correlates of crack use; (3) the impact of expectant mothers' crack use on the fetus, and the characteristics of the crack baby; (4) the persistent motor, language, and behavior problems experienced by crack-exposed infants and children; (5) community policies and strategies for dealing with crack-exposed infants; (6) multi-disciplinary support systems for mothers and children, including treatment systems for crack addiction and the prosecution of abusing mothers; (7) care systems for crack-exposed infants and toddlers, and protocols for management of drug-related child abuse; (8) educational policies and practices for use by schools in dealing with crack-exposed children; and (9) classroom management strategies for use with crack-exposed students. Contains approximately 120 references. (MDM)

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Kids, CRACK AND THE COMMUNITY:

Reclaiming Drug-Exposed Infants and Children

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KIDS, CRACK, AND THE COMMUNITY:

RECLAIMING DRUG-EXPOSED INFANTS AND CHILDREN

BARBARA BARRETT HICKS, PH.D.

GREGORY A. WILSON, M.D., EDITOR

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I am especially grateful to my husband, Wes, for his continuous support and encouragement, and to my sons and daughters-in-law, Mark and Leslie and Scott and Kim, for understanding and challenging me.

PREFACE

There is an exploding epidemic in the United States of babies born to mothers who are addicted to cocaine and crack. The effects of this maternal addiction on the developing fetus are devastating. These damaged babies will face social and educational hurdles for their entire lives (Toufexis, 1991). This knowledge should and must stir us to "righteous anger and action" (Shalala, 1991).

We are talking about a war. A war against the drug culture, against the plight of innocent victims; a war against the phenomenal cost to society this tragedy is causing today and for the entire life of this generation of children. There is fear that this will be a lost generation.

However, we are encouraged by the emerging interest at the federal, state, and local levels to create and implement comprehensive programs to address the multifaceted problems confronted by these infants. Current economic and political realities now encourage a more efficient and collaborative approach to developing such programs (Solak, 1991).

This book is intended to serve as a foundation. It begins to define the current scope and depth of the issues resulting from the horrible blow these children suffered before they were born. The first of these children are only now beginning to reach school age, and little empirical data exist to tell us what their needs will be over time. Thus, works that follow will fur-

ther clarify, expand, and perhaps correct, the assumptions included herein.

The problems presented by maternal crack abuse have clear implications for family systems, health-care systems, education systems, and the entire community. Thus, only a comprehensive holistic approach, using the strengths and resources of all systems at all levels, will be effective in addressing the problems that result when a baby is born to a crack-addicted mother.

Programs to aid crack-exposed infants and children must involve all components of the community, including those who are struggling with the problem. Key components include community leaders and policy makers; law-enforcement personnel and the judicial system; medical professionals of many disciplines; hospitals; school administrators; special educators; public health professionals; child-care organizations and foster families; business and industry; governmental agencies; and the media. To address the care of crack babies, programs must be planned strategically, supported from the top down by all components, and include mechanisms for awareness, education, and action (Hicks, 1990).

According to Shalala (1991), if we use the most modern management techniques, the most rigorous standards of accountability and measurements of productivity for the programs we create, this war can be won. Shalala also states that we will need all of our tolerance and compassion, our "street-smarts," and our toughness and wisdom. We will need sufficient resources, thus we must enlist the support both of our government bodies and our business communities to save these lives and futures.

We must address the fight for victims of crack abuse with courage and commitment. The challenges are formidable, but together, if we have the courage to fight the fight, we will save and salvage these children. Thus, we will save our society.

Barbara Barrett Hicks, Ph.D.

INTRODUCTION

The infant born to a mother who is addicted to or who uses crack cocaine is a part of a tragic generation of American children—a generation unfairly branded by some as "children of the damned" or a "biologic underclass" (Toufexis, 1991, p. 56). Or they may simply be called "crack kids." All of them suffer some degree of damage before they are born because of their early exposure to cocaine.

This generation first began to emerge in the mid-1980s, when the cheap, smokable form of cocaine called crack caused addiction in hundreds of thousands of women. It is estimated that cocaine, increasingly in the form of crack, is now the leading substance abused by pregnant women in New York City. Across the nation, the dimensions of this tragedy, of damaged children who are the unwilling participants in addiction, are staggering (Toufexis, 1991).

The costs of caring for these children are escalating rapidly. These infants, damaged in utero by the crack inhaled by their mother, are born too small and too early. Many run up huge medical bills. They also are predicted to place an enormous strain on an already overburdened educational system.

Many of their mothers continue to use crack after their infant is born, thus placing the child in an environment of neglect, poverty, and violence. Consequently, many of the babies are requiring extended and specialized foster-care placement. The data are sparse about how severe and pro-

longed will be the damage to these children. Some researchers believe that the children are irreversibly damaged. Others propose that with sufficient and concentrated treatment, intervention, and education, many of them can lead a normal or nearly normal life. We choose to believe the latter proposal.

However, the cost to both society and to these children will continue to climb if unchecked. It seems apparent that failure to allocate resources toward solving the problems associated with crack use by pregnant women will result in a social and financial disaster. Therefore, failure to address the multiple issues and problems created by this drug will result in a generation of the lost and unproductive, who will bleed our culture dry.

Benard and Seidman (1989) have concluded:

> *Just as no one system is responsible for a problem, no one system alone can solve it. Through the process of involving representatives of all sectors of the community, problems will more likely be addressed at their source and not just dealt with symptomatically. The inclusion of this wide spectrum of perspectives provides the essential first step in solving any social problem: defining the problem with the widest universe of alternatives. (p. 6)*

Thus, this book was written to encourage each one of us to accept this challenge and to move with all haste to create the systems of prevention and support necessary to stop this epidemic of damaged children. This responsibility is too large for any one component of our society. However, it is a task that must be addressed—now—by each one of us!

This is, indeed, a daunting challenge! While the ultimate solution to the crack-baby problem is to eliminate the conditions that lead a young woman to use cocaine, we must first attack the current problem with the babies. We must do this by drawing the line in the sand and announcing, "this is where it begins" (Shalala, 1991).

PART ONE

UNDERSTANDING THE PROBLEM

CHAPTER 1

ORIGINS OF COCAINE USE

Crack, smokable cocaine, was first introduced to the streets of the United States in about 1987. This event has ushered in a new era of horror in the world of illicit drug use in America (Bouknight, 1990).

Crack, now widely available, inexpensive, and highly addicting, is the cause of a new disenfranchised population. These are the infants who are born to crack-addicted mothers. Their numbers are increasing annually, and they now are found in all large cities and in many smaller American towns. Their heritage is tragic, and their potential dismal. They present an urgent challenge to all of society.

To meet this challenge, we propose that only a systems approach, using all available resources in our communities and schools, will have an impact. The first strategy in the development of such an approach is to seek a historical understanding of the origin of the problem.

SOUTH AMERICAN INDIAN USE

Cocaine, the basic ingredient of crack, the most threatening street drug of this decade, appears to have been used first by Andean peasants in Peru. These Peruvian Indians are known to have chewed the leaves of the Erythoxylon coca plant

at least as early as 500 A.D. (Bouknight, 1990). Cocaine is the alkaloid content of the coca leaf.

By the time of the Spanish conquest of Peru in the 16th century, the Incan civilization considered the coca plant sacred and used it during religious ceremonies. It also was awarded to heroes in recognition of feats of achievement (Forno, Young & Levitt, 1981; Kegley & Thomas, 1977). According to Kegley and Thomas (1977), it is possible that this early Incan culture also discovered the anesthetic properties of the plant.

The South American Indians, both historically and today, classify coca primarily as a medication that increases energy levels and alleviates hunger and fatigue (Kegley & Thomas, 1977). Andeans today mix wood ashes or lime with the leaf they chew. This practice is assumed to cause the release of the alkaloid, or active cocaine content, from the plant.

The early Spanish conquerors initially forbade the Indians to use coca. However, the Spanish slavers later relented, because they soon realized that the Indian laborers appeared to need to chew three to four ounces of coca leaves daily in order to be able to work the required long hours in the mines (Forno, Young & Levitt, 1981). Later, modern government efforts have been made to discourage this chewing practice. However, the majority of Andean Indians continue to chew the coca leaves.

In an attempt to better understand why the Andeans continue to use coca today, despite advice to the contrary, researchers have proposed varying theories regarding this uniquely cultural use of cocaine. These theories, or models, of coca chewing, include the food-scarcity hypothesis of Gutierres-Noriega, the hypoglycemia hypothesis of Bolton, and the ecgonine model (Burchard, 1975). A discussion of these contrasting theories of coca use may help us as we attempt to understand the crack epidemic we are facing today.

The food-scarcity hypothesis of coca chewing argues that because coca suppresses hunger, the Indians chew the leaf to suppress the effects of chronic starvation in an area where widespread food scarcity prevails.

Gutierres-Noriega and his associates further proposed that, after time, the chewer experiences a loss of appetite due to the chewing and begins to prefer the coca to food. These researchers also reported such physiological effects of coca chewing as mydriasis (dilation of the pupil of the eye), moderate increases in respiratory rates, and increases in both the blood pressure and heart rate.

Burchard (1975) reported that Bolton also studied highland peasant communities in Peru. Boulton reported finding widespread hypoglycemia among the inhabitants, and an associated high incidence of aggressive behaviors. Bolton argued that the two findings were related, as anger and aggression may occur when blood glucose falls below the nominal level. In turn, this aggressive reaction has the effect of boosting blood glucose levels in the short run.

Bolton proposed that the hypoglycemia found among the Indians causes hunger; therefore, the Indians chew the coca leaf to dull their hunger and boost energy levels. Bolton based this theory on the assumption that the observed increase in energy and relief of hunger is due to increased blood glucose levels caused by chewing the coca.

The ecgonine model of coca chewing is in basic agreement with Bolton's theory, that coca chewing raises the blood glucose level (Burchard, 1975). However, the ecgonine model also argues that the increase in blood glucose levels does not result from the extraction of cocaine from the coca bolus. Instead, this model proposes that because the Indians add such alkaline substances such as wood ash or lime to the coca bolus, the cocaine is degraded and ecgonine, not cocaine, is the primary end product.

Surprisingly, Burchard (1975) reported that the resulting weakened product, ecgonine, is about 80 times less toxic than cocaine and has little or no central stimulating effect. Additionally, he reported that ecgonine has only minimal anesthetic or euphoric properties. This reportedly less-potent end product, ecgonine, may account for the fact that excessive use of coca is rare among the Indian people of Peru and Bolivia (Forno, Young & Levitt, 1981).

If this finding is true, if ecgonine, not cocaine, is the product ingested by the Indians, researchers should be cautioned not to widely generalize from studies of the Indian practice of chewing the coca leaf to studies of the use of pure cocaine hydrochloride today. One might further caution current researchers not to make assumptions about the impact of crack on humans that are based on earlier studies of the use of other forms of cocaine.

Thus, as crack was first widely available in the U.S. in 1987, only studies conducted to learn about this drug since that time may have true relevance to the issues of crack-exposed babies. However, as research on the impact of crack on infants is sparse, this author will, of necessity, refer to relevant studies regarding the use of other forms of cocaine.

What is known is that the coca leaf is the source of a powerful drug, cocaine, which has both beneficial and very harmful qualities, and its production, export, and the current increasing epidemic of illegal use make it imperative that we continue to study the issues.

Cocaine Use and Abuse in the United States

The coca leaf was introduced to Europe as early as the 1600s (Kegley & Thomas, 1977). At that time, it was viewed primarily as a great new weapon against disease. However, the Europeans also used the drug to enhance social events, adding the leaf extract to wine and other beverages.

In 1858, Nieman first isolated and named cocaine as the active principle in coca leaves. Sigmund Freud, a cocaine user, reported the beneficial effects of cocaine in several papers between 1884 and 1887.

Kegley and Thomas (1977) noted that Freud hoped that the drug could cure his colleague, Dr. Ernst von Fleischel, of opiate addiction. However, as Freud experimented with cocaine, he soon realized that it seemed to cause psychological dependence and was not an effective treatment for "morphism."

Ironically, although Freud had experimented extensively to learn how cocaine could be used medically, he was not to be credited with discovering its most beneficial property. Instead, in 1884, his associate, Carl Koller, continued the experiments and discovered the modern use of cocaine as a local anesthetic (Forno, Young & Levitt, 1987). Koller was ultimately credited with this discovery.

Cocaine was brought to the United States in the 1800s (Bouknight, 1990). Kegley and Thomas (1977) reported that from the late 1800s to World War I, the beneficial effects of cocaine were advertised widely and the drug was an additive in patent medicines. Thus used, cocaine was prescribed to treat digestive disorders, asthma, and headaches. It also was claimed to be an aphrodisiac. Interestingly, when Coca-Cola was first introduced in 1892, cocaine was one of the ingredients.

In 1914, the Harrison Narcotic Act was passed in the United States, which restricted both the use and sale of cocaine and legally classified cocaine as a narcotic. The drug disappeared from the mainstream of America to the underworld. It remained there until re-emerging in the 1960s as a glamorous drug of wealthy jet-setters (Bouknight, 1990).

Chemical Properties and Physiological Effects

Cocaine is a complex chemical, commercially synthesized today by hydrolysis of the material in the coca leaf. Today, the

substance ecgonine, basically the same chemical which the Andeans theoretially obtain by chewing, is the product extracted from the coca leaves. This chemical is then further refined to produce cocaine hydrochloride (Kegley & Thomas, 1977).

The only legal use of cocaine today is as a very effective local anesthetic. It has great medical value for intralaryngeal and intranasal surgical procedures. Thus used, the drug not only is an effective topical anesthetic, but also has beneficial vasoconstrictive properties, closing down tiny blood vessels in the area of injection, and helping to prevent excessive bleeding in the nose or throat during an operation.

Cocaine is not absorbed through unbroken skin. However, it is absorbed easily through such tissues as the mucous membranes of the nasal passages and through the eye. It is particularly well absorbed through the vascular bed of the lungs when it is smoked and inhaled.

When abused, cocaine is a powerful central nervous system stimulant. It depresses the inhibitory neuronal pathways, causing euphoria, restlessness, and excitement. It acts centrally on the nervous system and causes an increased heart and respiratory rate (followed by a decrease), as well as a rapid rise in blood pressure.

Cocaine abusers may experience anxiety, insomnia, anorexia, weight loss, hyperactivity, paranoia, and euphoria (Forno, Young & Levitt, 1981). When abusers stop using cocaine, they may suffer an extreme emotional rebound, called the "cocaine blues," and may become quite depressed and suicidal.

Motor activity may increase with low doses; lack of coordination results from large doses; and very high doses may result in tremor, lack of coordination, and death (Kegley and Thomas, 1977). Respiratory and cardiac arrest are the immediate causes of death from cocaine use.

Death due to cocaine toxicity usually occurs quickly, within two or three minutes following ingestion of the drug. However, in some cases, death may be delayed for as long as 30 minutes following the onset of symptoms of toxicity. If circulatory or respiratory failure persists for several minutes without resulting in death, permanent brain damage may result. Toxic manifestations may occur without warning both in the person who uses the drug for the very first time and in the chronic user.

According to Bouknight (1990), when cocaine is used as an illicit drug, "snorting," or nasal inhalation, is the most popular method of administration. Because of its vasoconstrictive properties, snorting eventually may cause a perforation of the nasal septum, though this is rare. Persons who abuse the drug also dissolve it and inject it intravenously.

For the abuser of any form of cocaine, psychological dependence is caused by the need to obtain and maintain the state of euphoria and exhilaration that results from using the drug. True physical dependence does not develop, and true physical withdrawal does not occur. However, the drug produces the most powerful psychological dependency of any illicit drug. And with higher doses, the abuser may develop a toxic state resembling paranoid psychosis. Continued abuse leads to a pattern of compulsive use, usually of several drugs in combination with cocaine.

Cocaine is the only drug that has shown a constant steady increase among abusers in the United States in the 1980s (Colliver, 1986). According to Colliver, the number of Americans who report having tried cocaine at least one time increased from 5.4 million in 1974 to nearly 23 million in 1985. Bingol, Fuchs, and Diaz reported in 1987 that cocaine was the leading substance abused by pregnant women in New York City.

Adding a volatile solvent, usually ether, to the crystalline cocaine hydrochloride produces "freebase." Freebasing allows

the user to smoke the cocaine. The freebaser treats the street cocaine with a base, usually aqueous ammonium or sodium carbonate, then adds an equal quantity of the volatile substance (ether), forming two layers in solution. The ether layer contains the pure freebase cocaine, the water layer contains ammonium chloride and most of the additives. As the ether is evaporated, the pure cocaine alkaloid remains. If the abuser attempts to hasten the evaporation of ether by heating the mixture, an explosion may result.

In other studies, cocaine freebase users were reported as smoking increasingly larger amounts of cocaine at each use (Weiss, 1984). Additionally, according to Weiss, freebase users were reported as abusing cocaine at almost double the number of episodes each week than were persons who were using the drug intravenously or who were snorting the drug.

The freebase method of using cocaine increased from less than 1% of cocaine use in 1977 to nearly 5% in 1981 and 18% in 1984 (Weiss, 1984). Thus, it would appear that freebasing, as a method of administration, was gaining in popularity prior to the introduction of crack (Atkins, 1988).

In 1987 it was estimated nearly six million American adults were using cocaine regularly. However, two disturbing trends in cocaine abuse patterns are of particularly great concern.

First, an increasing proportion of youth and young adults are using cocaine in any form (Adams, 1987). It is estimated that in 1987 there were 518,000 users between the ages of 12 and 17 years of age, and more than three million users between the ages of 18 and 25 years.

Second, researchers report that there is a trend toward increasing use by females. Johnston reported in 1986 that more than 42% of cocaine users were females. Today, studies continue to indicate that increasing numbers of females are abusing cocaine.

Other related disturbing trends include the increasing numbers of hospital emergency room admissions associated with cocaine use and the increasing numbers of cocaine-related deaths. Atkins (1988) reported that the number of cocaine-related deaths in the United States increased almost threefold between 1981 and 1984, and that provisional data for 1985 indicated that the numbers of cocaine-related deaths were continuing to occur at unprecedented high levels.

Today, however, these trends are overshadowed by the problems associated with the exploding production and abuse of crack cocaine in this country. Crack is a freebase form of cocaine that is sold in very small crystals, or "rocks." It is inexpensive and usually is smoked in combination with tobacco or marijuana (Ringwalt & Palmer, 1989).

This is the form of cocaine which is having a devastating impact on the lives of a booming generation of babies born to addicted mothers (Revkin, 1989). This is the drug that we must fight.

CHAPTER 2

SHIFT FROM COCAINE TO CRACK

As recently as the 1970s, leading clinicians, researchers, and policy makers were proposing that cocaine was a relatively harmless recreational drug (Rawson, 1990). Today, cocaine no longer can be considered harmless or without powerful addictive properties (Atkins, 1988). Its psychologically reinforcing nature, coupled with increasingly efficient systems of delivery and greater availability, leads many users to compulsive abuse that disrupts the family and leads to loss of employment, to mental and physical deterioration, and, for some, to death.

The recent introduction of crack cocaine to the streets of America has changed the idea that cocaine is a drug only for the elite, the rich and famous. It is no longer a glamorous drug with a "Hollywood" image (Atkins, 1988; Hannan & Adler, 1990). Instead, crack users are found in nearly every age group. They are more often poor than wealthy, and they are female as often as they are male (Hannan & Adler, 1990).

The actual number of cocaine abusers in the United States is not known for certain. However, estimates range from three to ten million, with from 20% to 40% of those abusers being crack users (Rawson, 1990). Also, according to Atkins (1988), the incidence of all forms of cocaine use since the early 1980s has increased in astronomic proportions.

Further, cocaine is the only drug that was used by constantly increasing numbers of American citizens during the 1980s (National Institute of Drug Abuse, 1986). With this increasing use of cocaine in the United States, it is now recognized that ever-increasing numbers of pregnancies are complicated by its use (Chasnoff, Burns, Schnoll, & Burns, 1985).

The Emergence of Crack

In the mid-1980s smokable cocaine—known as crack—was introduced to the streets of America (Bouknight, 1990). A national epidemic resulted from this occurrence, and it has a major impact on public health. According to Bouknight (1990), California, Florida, New York, Pennsylvania, and Michigan are today particularly affected by significant increases in morbidity and mortality related to crack.

Crack is said to be named for the crackling sound that is heard when the powder is heated inside a small glass container (Atkins, 1988). Street cocaine varies greatly in purity; however, crack cocaine is nearly always 10 to 20 times more potent than the available powdered street cocaine.

Crack is unpurified freebase cocaine, formed when cocaine hydrochloride is cooked in water with an alkaline substance, such as sodium bicarbonate, and ether is used to extract the crack cocaine (Hannan & Adler, 1990). The resulting substance, known as "crack," solidifies into small "rocks" (Gay, 1989). These small pieces of crack are smoked, either by combining them with tobacco or marijuana in a cigarette or in a water pipe.

Like all street forms of cocaine, crack contains adulterants or additives (Shannon, 1988). Therefore, the crack user also is exposed to these adulterants, which are often toxic. The additives commonly include sugars and stimulants, which alone can cause psychosis, seizures, and irritability. Also, such toxins as strychnine are often added and can lead to acute renal failure. Other adulterants, including local anesthetics and such

inert substances as talc and cornstarch are added at times. According to Shannon (1988), the additives themselves contribute to the morbidity and mortality associated with crack use.

Atkins (1988) reports that crack, when smoked, reaches the brain by absorption from the lungs in less than 30 seconds. Additionally, researchers report that the average heavy crack user will become addicted within 2 weeks, as compared with an average of four years for persons to become addicted when snorting cocaine (Issacs, 1987).

There are several factors that contribute to the enormous appeal of crack. Crack is the most inexpensive form of cocaine available. Also, it is much more convenient to use, because it does not require needles.

Additionally, the crack "high" is extremely intense and, as noted before, almost immediate in onset (Hannan & Adler, 1990). This is because smoking and inhaling the potent drug results in its very rapid absorption from the vascular bed of the lung, a nearly immediate "high."

The use of crack produces a very rapid euphoria as the drug is absorbed from the lung; however, the euphoria also wanes quickly, creating an intense craving quite different from earlier popular forms of cocaine (Brower & Anglin, 1987). Therefore, the crack user seems more likely than the user of other forms of cocaine to develop a compulsive preoccupation with both obtaining and using the drug (Siegel, 1987).

The crack-induced euphoria is reported to last for only about 20 minutes and is followed by a "crash." The user often then turns to other substances, such as alcohol, marijuana, or opiates, to attempt to relieve this crash (Garber & Flaherty, 1987). Consequently, crack abusers are, very often, polydrug abusers.

Crack is the most addictive derivative of cocaine known, and the addiction to crack far exceeds any addictive response

to heroin (Revkin, 1989). This addiction to crack is so intense that monkeys used in drug research have been observed to inject themselves continuously with crack for days until death occurs (Revkin, 1989).

The craving for crack is so demanding that, in most cases, the user will resort to many devious behaviors or criminal acts in order to have money to obtain more of the drug. These behaviors include theft, illicit sex, deceit, and violence (Ringwalt & Palmer, 1989).

The patterns of crack use differ from previous cocaine use in at least two notable ways. According to Atkins (1988), one difference is that the crack user does not need to convert the cocaine hydrochloride to freebase but purchases the freebase "rock" instead. Thus, the drug is purchased "ready to use."

A second difference in the pattern of crack use is the introduction of a "unit dose" concept to the drug market. This has the initial effect of removing the price barrier for the user and makes the drug much more profitable for the dealer.

Because crack is less expensive per unit dose than cocaine, it is considered to be much more affordable (Rosecan, 1987). However, due to the highly addictive nature of crack, the users quickly need, and buy, more of the drug. Therefore, the crack habit soon becomes even more expensive than addiction to cocaine hydrochloride.

Psychological Correlates of Crack Use

Not much is known about the correlates of crack use. Washton and Gold in 1987 reported findings based on an admittedly biased convenience sample of 458 cocaine users who voluntarily called a national hotline. Within this sample of cocaine users, 72% of those who used crack were male, and 85% admitted that they were severely depressed.

In a later study, Ringwalt and Palmer (1989) surveyed a normal, non-clinical sample of adolescents. Ringwalt and

Palmer reported that the adolescent crack users in their study did not differ by race or gender from users of other forms of cocaine, but they were significantly more likely to be younger and to make poorer grades.

Ringwalt and Palmer also reported that the youthful crack users in their study were more likely to be depressed than users of other forms of cocaine; were more alienated from family and friends; and, if they were students, were generally more likely to have talked about their problems with a teacher or counselor. However, these researchers also reported that the great majority of both cocaine- and crack-using students did not talk to any school staff person about their problems; and many tended to drop out of school earlier than non-users.

Ringwalt and Palmer concluded that adolescent crack users were a particularly vulnerable population in many ways. These youth were more impoverished and were also younger, with a mean age of 15.6 years compared with a mean age of 16.4 years for users of other forms of cocaine.

These vulnerable, younger, and poorer youths are able to procure both cocaine and crack by dealing drugs, stealing, and engaging in other criminal behaviors (Clayton, 1985; Gold, 1984; Washton & Gold, 1987). Thus, it is logically assumed, illegal or criminal activity is another frequent correlate of adolescent cocaine and crack use.

Nature of the Current Problem

The current crack usage epidemic has occurred for several reasons. First, the drug initially is very inexpensive, costing about one dollar for a puff from a crack pipe in most crack houses. Second, the immediate high is extremely intense, due to the power of the lung to rapidly absorb the inhaled smoke. Third, crack has become an important source of income to drug dealers and the urban underclass (Hannan & Adler, 1990). Issacs reported in 1987 that of the possible 4 to 10 million or more regular cocaine users in this nation, as many as 2 to 4

million turned to crack as soon as it was available. This trend has continued to escalate across the United States, and the proportion of women of child bearing age who use crack today is exploding (Revkin, 1989).

Women who are crack users often trade sex for drugs. Thus, they are called "toss-ups" (Hannan & Adler, 1990). This is due to the fact that they are used sexually by one man and then "tossed" to another man. Additionally, in sex-for-drugs activities in crack houses, women are often treated like slaves and are forced to engage in degrading and bizarre sexual acts (Fullilove & Fullilove, 1989).

These women—most often poor, black, and residents of the inner city—are forced to engage in illicit, impulsive, and unprotected sex to support their crack habit. And they are becoming pregnant.

There is confusion about exactly how many crack-exposed babies are born each year. Currently, data indicate that as many as 375,000 babies are born in this country each year who, on drug screening tests, are shown to have drugs—including alcohol—in their system (Toufexis, 1991). However, many drug-abusing women are aware enough to stop their drug use in the days immediately prior to the expected delivery of their infant. Thus drug screening tests will not identify all of the infants who were, in fact, prenatally exposed to drugs. Estimates of the actual numbers of infants exposed to drugs in the womb at some time are from 500,000 to 750,000 per year—or nearly 20% of all American newborns (Anderson, 1991). Additionally, according to Anderson (1991), the National Institute on Drug Abuse (NIDA) has estimated that a minimum of 4.5% of all American newborns are exposed to cocaine, today most often crack, before they are born.

The impact of this tragedy is staggering. Hospitals in major cities, including New York, Los Angeles, Detroit, and Washington, D.C., substantiate the NIDA statistics. These hospitals are reporting data to indicate that the proportion of

their newborns who show the effects of prenatal drug use is 20% or more (Toufexis, 1991).

These drug-impacted babies, when identified, often become "boarder babies," because their abusing mothers are considered unable to care for them (Revkin, 1989). A boarder baby is one who remains in the hospital far beyond the necessary time, most often because an alternative environment is not available for the baby. According to Revkin, boarder babies are "piling up by the dozen...[while] caseworkers...decide which babies must go to foster homes or grandparents, and which [may] stay with the mother" (1989, p. 64).

Some physicians who treat drug-exposed newborns, and who are practicing in communities where the crack problem first originated, believe that the actual numbers of women who are crack users may be leveling off, but not for an encouraging reason (Revkin, 1989). The reason appears to be that the population of persons who are susceptible to crack use is becoming saturated in those inner-city communities. These saturation groups of users include women who are delivering their second, third, and fourth crack-impacted babies.

In addition to the obvious problems associated with the babies who are born to crack-using women, the widespread use of crack has caused the emergence of some other very disturbing social patterns (Hannan & Adler, 1990). One striking pattern is a drug-associated epidemic of sexually transmitted diseases across the nation, with syphilis, gonorrhea, and Acquired Immune Deficiency Syndrome (AIDS) being the most notable (AIDS Update, 1988).

The associated practices of crack abuse, sex in trade for crack, unprotected sexual intercourse, and sharing of contaminated hypodermic needles apparently are contributing to the sudden increases in the incidence of these diseases (Bouknight, 1990; Kresnak & Flanigan, 1987; Revkin, 1989; "Syphilis Outbreak," 1991). Another possible contributing factor in the correlation between the increases in crack use and sexually

transmitted diseases is that crack is being used by teenagers at a time in their lives when sexual experimentation and promiscuity are common behaviors (Hannan & Adler, 1990).

While the problem of the rising incidence of sexually transmitted diseases is most notable in the inner cities, the phenomenon also is occurring in rural areas (AIDS Update, 1988; Goldsmith, 1988). As an example, Michigan, a largely rural state, reported a statewide, 80-fold increase in penicillin-resistant gonorrhea cases between 1983 and 1987 (Kresnak & Flanigan, 1987). In New York City, the incidence of primary and secondary syphilis in women increased from 541 cases in 1986, to 1,814 in 1988 (Centers for Disease Control, 1989).

One recent newspaper report indicated that, "syphilis cases [have] increased fivefold in...East St. Louis and three surrounding townships...[and officials] fear many more cases are undetected." This report also noted that about four-fifths of the syphilis cases were women, and that six of the cases were infants born to infected mothers. The report further noted that "a number [of these female victims] are prostitutes or drug abusers, who are trading sex for drugs" ("Syphilis Outbreak," 1991, p. A8.).

The direct link between increases in these diseases and crack-related sexual practices seems obvious. In 1988 the Centers for Disease Control reported a dramatic rise in cases of syphilis and penicillin-resistant gonorrhea in cities also reporting high levels of crack use (Hannan & Adler, 1990). Accordingly, the apparent relationship between increased crack use and increased rates of sexually transmitted diseases seems confirmed.

The same drug-related factors also appear to be associated with increasing cases of Human Immuno-deficiency Virus (HIV) infection and with the lethal Acquired Immune Deficiency Syndrome (AIDS) (Bouknight, 1990; Chadwick, 1988). Crack users may have twice as many sexual partners as those who do not use the drug (Hoezsberg, Dotson & Abulafia,

1989). Thus, crack use appears to provide a means for AIDS to enter the population of those who do not abuse intravenous drugs (Fullilove & Fullilove, 1989).

Because our concern is with the crack-using mothers and their children, we also must be sensitive to the plight of those mothers; and we must try to imagine what their lives must be like if they become infected with the AIDS virus.

We must try to imagine one of these mothers facing her own stigma-laden, terminal illness and, perhaps, also the illness of her children, born and unborn. We need to imagine her having to continue caring for her family during her illness, while she also supports her drug habit. However, even if we could imagine how this mother might feel, nothing would really come close to an understanding of her desperate plight.

For the crack-addicted mother, the implications are devastating of being dependent on drugs, having inadequate support systems or resources, having limited coping skills, knowing that she is infected with the AIDS virus, and being pregnant (Woodruff, Sterzin & Hanson, 1989).

In fact, according to Woodruff et al. (1989), our current system of service delivery is not "designed to accommodate the inconsistencies and behaviors of drug addicted and disenfranchised people" (p. 17). Only an innovative, trans-agency model of service delivery can begin to respond to the needs of HIV-infected, addicted, and pregnant women or mothers (Woodruff, Sterzin & Hanson, 1989).

According to Hannan and Adler (1990), a final social pattern which deserves comment is that which is reflected in the financial implications for society, and which is created by the lucrative market in dealing crack. To fully understand the powerful influence of profit on narcotics addiction, including addiction to crack, we need to examine the economics of narcotics. According to an early report on drug addiction, it is a grave mistake to overlook or underestimate the powerful eco-

nomic forces operating in drug traffic. There are financial incentives to increase the numbers of crack users. This, in turn, results in the enhancement of social disorganization, particularly in poor urban areas. A circular relationship exists, wherein addiction invites and supports drug traffic; and the drug traffic, in turn, enables addiction to endure (New York Academy of Medicine, 1963).

The New York Academy of Medicine, Committee on Public Health (1963) noted that illicit drug markets usually yield extraordinarily high profits. Today, for the dealer of crack, these financial promises of profit continue to create a powerful attraction. Families in poor urban areas often recognize that dealing in crack can enable them to quickly bring much-needed revenues into the home (Hannan and Adler, 1990).

Society must mobilize now to meet the needs of drug-abusing adults, the needs of babies affected by crack and other drugs before they are born, and the needs of the larger community that are the direct result of crack addiction. The question is: Does society have enough compassion and concern to agree to pay the very big price required to provide treatment for addicts, to control the flood of illicit drugs, and to provide for the needs of the babies who are exposed to those drugs before their birth?

PART TWO

WHAT ABOUT THE BABIES?

CHAPTER 3

IMPACT ON THE INFANT

In 1989 Andrew Revkin reported that:

> *Hundreds of thousands of babies are being attacked by [crack] cocaine while still in their mothers' womb. Some will die. The others will have their development dangerously impaired. (p. 63)*

According to Revkin (1989), the numbers of crack-exposed babies are growing explosively, "doubling each year in many major cities" (p. 64). In 1988 the National Association for Perinatal Addiction Research and Education (NAPARE) reported that the number of deliveries of babies affected by maternal substance abuse may reach 11% of all newborns, or approximately 375,000 newborns each year (Weston et al., 1989).

While this problem is by far the worst in crack-infested, inner-city neighborhoods, it cuts across all lines of race, class, and geography. Crack-damaged babies are born in the suburbs and in rural towns, as well as in our cities. Revkin (1989) states, that "if cocaine use during pregnancy were a disease, its impact would be considered a national health care crisis" (p. 64). He further comments that the effects of this crisis will continue to affect society as the cocaine-exposed babies grow older and enter our schools. The public reactions to the epidemic of crack-exposed infants includes both pity and fear (Toufexis,

1991): pity, for the babies as the innocent victims who always will have difficulty at home, on playgrounds, and in school; and fear, that these babies will become a multitude of unmanageable, disruptive, and disturbed youth, a lost generation dependent on society for their sustenance.

Some of these dire predictions may prove to be correct. Some will not. This book attempts to give a rational perspective regarding crack-exposed babies and to predict their future with a sense of reality.

Profile of the Abusing Mother

Weston et al. (1989) further indicate, that the increasing incidence of drug abuse by child-bearing women is primarily due to increasing cocaine use. They also indicate that, more specifically, the increasing use of drugs by child-bearing women is probably due to the increasing availability of the cheaper, and more addictive, crack cocaine.

There is a known, and fairly small, population of crack-abusing mothers who are affluent; their drug use may not be detected or reported, and the developmental problems evidenced by their babies are not likely to be ascribed to prenatal drug exposure. However, the much larger group of poor and young women who are using crack during their pregnancies are overwhelming the current systems of care and support.

Because crack use is especially high among the poor, it poses even greater dangers to the babies within that population (Cherukuri, Minkoff, Feldman, Parekh & Glass, 1988). Therefore, this larger group, the poor, and young mothers and their infants, are experiencing ever increasing needs. These are the mothers and infants who are emphasized in this book.

Shedler and Block (1990) sought to define correlations between psychological characteristics and adolescent drug use. They described adolescents who are frequent drug abusers as:

> *...not dependable or responsible, not productive or able to get things done, guileful and deceitful, opportunistic, unpredictable and changeable in attitudes and behavior, unable to delay gratification, rebellious and nonconforming, prone to push and stretch limits, selfindulgent, not ethically consistent, not having high aspirations, and prone to express hostile feelings directly. (p. 617)*

Additionally, they found that the young frequent drug user does not have the capacity for close relationships and is prone to distrust others. The adolescent users whom they studied also were reported to feel victimized by life.

Interestingly, Shedler and Block noted that the drug abusers they studied appeared to have been relatively maladjusted since childhood. They reported that the parents of the adolescents studied were "relatively cold, unresponsive, and underprotective" (Shedler & Block, 1990, p. 621). Thus, the abusing adolescents were probably also victims of inadequate or abusive parenting.

Given the findings of this study, the magnitude of problems when the young crack abuser becomes a parent are alarmingly clear. The child who is born to the crack-abusing parent is most often not a normal baby but is damaged by the drug before birth. Therefore, this child presents serious problems to the parents, by this fact alone. In combination, the inadequate parent and the child with special parenting needs presents overwhelming problems to society-at-large.

Ira Chasnoff, a pediatrician at Northwestern Memorial Hospital in Chicago, is one of few pioneers who is systematically publishing research regarding cocaine- and crack-using mothers and their babies. Most of the mothers with whom Dr. Chasnoff works are polydrug users. Many are prostitutes, and many are minority women. Most are young, probably school dropouts. Most are on welfare, use drugs continuously during their pregnancy, and have multiple sex partners. Few of them receive early or adequate prenatal care; instead, they often

receive medical attention only when they experience the onset of sudden, hard, and early labor, which results from their crack use. According to Chasnoff (1988a), these pregnant women also have a high incidence of infectious diseases, including hepatitis (24%) and sexually transmitted disease (10.5%).

Dan Griffith, a developmental psychologist affiliated with the National Association for Perinatal Addiction Research and Education (NAPARE) in Chicago, studies the effects of prenatal crack abuse on early mother-child interactions.

Griffith reports that most of the cocaine-using mothers he has studied reside in high-stress environments and have few social supports. He adds that these mothers often have a high degree of emotional instability, with low self-esteem, an exaggerated need for affection, and faulty coping mechanisms. He adds that their mothering styles reflect detachment from and poor bonding with their infant, a sense of being overwhelmed, frustration, hostility, and anxiety.

Many of the mothers have been sexually or physically assaulted. Often, family members and friends of the mother also use the drug. These mothers do worry about their infants, but crack remains the priority in their life.

Mothers who use crack cocaine and who are alienated from their families are usually unable to provide adequate care for their infants without comprehensive assistance. Additionally, many of them will have more than one infant, each one drug-exposed before birth (Ringnalt & Palmer, 1989).

Because crack use often causes the onset of uterine contractions and an increase in blood pressure, many of the pregnancies end in spontaneous abortion or delivery of a premature and growth-retarded infant. Crack also can lead to abruptio placentae, a situation in which the placenta tears away from the uterus, causing severe bleeding, early labor, and often, fetal death. In fact, the connection between crack and the spasmodic uterine contractions it causes is well understood

on the streets, where the word is that "a crack binge is a surefire way to give yourself a no-fuss abortion" (Revkin, 1989, p. 63).

Dr. Chasnoff (1988a) proposes that this high-risk population of women "must be targeted for increased intervention, prevention and treatment" (p. 95). He also proposes that further research must "focus not only on the effects of cocaine per se, but also [on] the interactive effects of polydrug use, the dynamics of maternal/infant interaction in a substance abusing mother, and environmental factors which place these infants [and mothers] at high risk" (p. 103).

Effects of Maternal Crack Use on the Fetus

Just what is the impact of crack abuse by a mother on her unborn child? How badly are these babies damaged by this drug?

These questions have created a fierce debate among physicians, nurses, social workers, educators, and law enforcement personnel (Toufexis, 1991). No one is certain about the long-term implications of pre-natal crack exposure on the infant. In addition, very little is really understood about how the mother's use of crack affects her developing fetus at the time the infant is exposed (Revkin, 1989).

On the one side are those who believe that the damage to these babies is permanent and irreversible. Toufexis (1991) reports that Kathy Kutschka, of the Speech and Language Development Center in Buena Park, California, believes that children who have been exposed to crack before birth will always have problems. She pessimistically states that "none...of the children...[they are treating]...will be able to function in a normal lifestyle without some kind of sheltered living arrangement" (Toufexis, 1991, p. 59).

Others do not agree that these children are doomed to a life of dependency. They charge that "crack has become a convenient explanation for problems that are mainly caused by a

bad environment" (Toufexis, 1991, p. 59). However, those who propose that these children are salvageable do agree that they will present problems never seen before.

It is possible to describe what is currently known about the impact of cocaine on the developing fetus. The infants exposed to crack before birth are best described as "fragile." The fetus of the crack-abusing mother is particularly vulnerable to the drug for many reasons. One primary factor is that the cocaine molecule readily crosses the placental barrier, and as the fetal liver is not yet able to detoxify the drug, the crack remains longer in the fetal blood and tissues (Revkin, 1989). Thus, the fetus is literally bathed in the drug ingested by the mother. Furthermore, through her continuing drug use, each "hit" of crack she uses is transferred directly and immediately to her infant. In addition, as the mother is almost always more concerned with her addiction than with her pregnancy, she most often receives no health care and is not concerned with proper nutrition or rest.

Evidence of circulatory impairment is a common feature found in all infants exposed to crack before birth (Chasnoff, 1988a). Researchers believe that maternal crack use causes damage to the fetus because of a reduction in the flow of blood to a particular organ or tissue. The prenatal exposure to crack is believed to result in strokes in the infant, brought on by the tendency of the drug to increase blood pressure (Revkin, 1989). In infants whose mothers are known to have used crack in the two days immediately prior to delivery, a resultant stroke, or cerebral infarction, is believed to occur, which may cause damage to brain tissue. This, in turn, also may cause muscular and neurological problems. This phenomenon has been documented in a few infants (Chasnoff, Bussey, Savid & Stack, 1986). However, larger studies are indicated for future research.

According to Roland and Volpe (1989), while the actual cause of the damage to the brain is not well defined, current knowledge of these infants does indicate that there is a signifi-

cant risk of infarction in the brain, but that there may be several possible causes. These possible causes include "direct vasoconstriction of fetal cerebral vessels, thromboembolism associated with placental vasoconstriction, systemic circulatory failure secondary to placental abruption and disturbed placental blood flow, and thrombocytosis" (Roland & Volpe, 1989, p. 91).

To summarize, the crack-exposed infant, due to insufficient blood flow at varying times or to an infarction of a specific area, may be born damaged. In addition to damage to the central nervous system, this damage may include malformed or malfunctioning kidneys or genitals, missing digits, or, rarely, ileal atresia—in which part of the intestine fails to develop for lack of blood (Revkin, 1989).

The infant also may be extremely premature—born at 24, 25, or 26 weeks of gestation. This baby may be so tiny that a leg might only be as large around as a man's index finger, the head not much larger than a tennis ball.

Chasnoff has found that these infants have an average reduction in head circumference of about three quarters of an inch from the norm. This microcephalic characteristic would appear to be linked to later learning problems, which probably are due to crack-precipitated neurological damage in the infant before birth (Toufexis, 1991). Although the link is not yet clear, recent studies have established that infants who are prenatally exposed to cocaine also are at increased risk of Sudden Infant Death Syndrome (SIDS) (Ward, Schutz & Kirshna, 1986). Thus, all diagnosed crack babies should be studied, and if the pneumogram is abnormal, they may require the support of an apnea monitor to monitor for abnormal heart or breathing patterns (G. Wilson, M.D., personal communication, August 6, 1992). In the event that an apnea monitor is required, the caregivers must be taught to properly use this equipment. It also is critical that the caregivers are able to use

cardio-pulmonary resuscitation (CPR) in the event that abnormalities occur.

Crack also appears to affect infants' brain chemistry (Toufexis, 1991). According to Toufexis, the drug changes the action of neuro-transmitters, the links in the brain between nerve cells that normally help to control moods and responsiveness.

In a study at the University of California at San Diego, researchers examined crack-exposed babies using ultrasound. They found that approximately one-third of the babies had gross lesions in the brain (Toufexis, 1991). These brain lesions usually are seen in the deeper areas of the brain, which govern thinking and learning, and probably are the result of crack-induced restriction of blood flow to that area of the brain. This finding suggests that the babies' ability to learn may be reduced or compromised.

Also of great concern is the finding that, even if the mother ceases her crack use before the baby is born, any damage created by even one prenatal use of the drug is permanent and irreversible (Chasnoff, 1988a). These infants will never recover from any resultant physical deformities; they may have later behavioral problems that will sabotage their development; and they may be less able to overcome the challenges of life. Thus, they may suffer a lifetime of problems due to their exposure to crack.

Characteristics of the Crack Newborn

Crack-exposed newborns often need to receive the maximum in intensive care to survive. The baby generally is at increased risk overall, simply because he or she is born to a mother who is quite likely malnourished, who receives little or no prenatal care, and who has little or no parenting skills (Cherukuri, Minkoff, Feldman, Parekh, & Glass, 1988).

The crack-exposed infant often is 3 or 3 1/2 months premature and may weigh under two pounds (Revkin, 1989).

Although undersized, the infant may have a normal appearance. However, he or she may have unseen congenital deformities. In addition to possible organic malformations, particularly of the genito-urinary or gastrointestinal tract, the baby may show evidence of a cerebral stroke, muscular paralysis, tremors, or weakness (Griffith, 1989; Schneider, Griffith & Chasnoff, 1989). In general, the birth outcomes for the infant born to a crack-abusing mother are worse than those outcomes for infants who were exposed to other forms of cocaine before birth (Kaye, Elkind, Goldberg, & Tytun, 1989).

In the newborn nursery the crack-exposed infant commonly will show irregular sleeping and poor feeding patterns. This baby is hyperirritable and displays increased tremulousness, or trembling of the extremities. This baby also has higher than normal respiratory and heart rates as well as hyperactive startle reactions (Schneider, Griffith, and Chasnoff, 1989).

Some clinicians have described these signs as symptoms of crack withdrawal. However, Schneider et al. (1989) note that this is probably not true, as the infant more likely is still experiencing direct effects of the prenatal crack exposure. Also, some of these signs persist long beyond the newborn period and thus may be indicators of a lasting central nervous system change, rather than withdrawal symptoms.

According to Kaye et al. (1989), these preterm, low birthweight infants have a much greater need for longer periods in hospital intensive-care units. In fact, according to Chasnoff (1991), cocaine-exposed babies are 50% more likely than unexposed babies to require care in a neonatal intensive-care unit.

When compared with drug-free newborns, the crack-exposed baby continues to show depressed interactive abilities beyond the immediate newborn period and remains much more irritable than the norm (Schneider, 1989). The prenatally crack-exposed infant has a very low threshold for overstimulation and is described as "irritable, [and] unresponsive" (Griffith, 1989, p.5). Dr. Bala Ramachandran, a pediatrics resi-

dent at Cook County Hospital in Chicago observed that "the crack babies in the nursery are so irritable that the nurses at times have great difficulty in caring for them" (1992).

If a baby has a low threshold for overstimulation, that baby requires much more than the normal level of assistance from caregivers in order to manage their hyperexcitable nervous system (Toufexis, 1991). Thus, caregivers must learn to modulate the stimulation level in the environment to fit the needs of each individual baby (Horowitz, 1984). If the mother or caregiver is not able to provide the necessary sensitive environmental modulation for the crack-exposed baby, the infant almost certainly will be exposed repeatedly to experiences that are overwhelming and will actually impede the development of the baby (Griffith, 1988). Caring for these infants in instinctive and natural ways only proves frustrating for the caregiver and is excessively stimulating for the crack-exposed baby.

Some sociologists and pediatricians are convinced that these potentially explosive situations, to which cocaine and crack abuse is a contributing factor, may underlie a recent sharp rise in child abuse in the United States (Toufexis, 1991). According to Griffith (1988), the irritability and unresponsiveness demonstrated by crack-exposed infants often is perceived by the mother as rejection. Thus, the mother may react to the baby with detachment or hostility and may overstimulate or actually abuse the baby.

Thus, it is critical that the caregivers for the crack-exposed infant, whether this be a parent, a grandparent, or perhaps a foster parent, are taught specifically how to care for this baby.

The cocaine-exposed newborn also has great difficulty functioning normally in state control and orientation (Chasnoff, Burns, Schnoll, & Burns, 1985). State control refers to the ability of the infant to move appropriately through various states of arousal in response to the demands of the environment. Orientation is the ability of the infant to interact

actively with the outside world "by attending to and responding to visual and auditory stimuli" (Griffith 1988, p. 108).

The normal newborn has minimal difficulty with state control and moves through the states of arousal, "including sleep states, a drowsy state, and a crying state" (Griffith, 1988, p. 106), in a relatively smooth transition. Additionally, the states achieved by the normal newborn are appropriate for the level and type of stimulation the infant is receiving.

On the other hand, the crack-exposed newborn spends most of the time in arousal states that tend to "shut [him] off from external stimulation" (Griffith, 1988, p. 106). Also, for the crack-exposed infant, his or her state changes usually are abrupt and inappropriate for the level of stimulation the baby is encountering.

The normal newborn can track visual stimuli and will attempt to locate sounds in the environment. In comparison, the crack-exposed baby has very limited orientation abilities. Even with large amounts of assistance, these babies are capable of only "fleeting attention to a to a stimulus before they begin showing signs of distress" (Griffith, 1988, p. 108). Additionally, probably related to prenatal damage to the central nervous system, the crack baby is very easily overcome by environmental stimuli. When this happens, the baby will either fuss for a short while and then doze off—in an apparent attempt to avoid the external stimulation—or will tense and cry for hours. Again, this creates a situation in which caring for the infant is extremely difficult. The caregiver, not able to nurture the baby in the normal ways, is more likely to either neglect the dozing baby or, worse, abuse the crying one.

Griffith (1988) describes four patterns of state control that commonly are exhibited by crack-exposed newborns. In the first pattern, the infant goes into a very deep sleep and does not awaken, no matter how much stimulation it receives. In fact, these babies seem to go into a deeper sleep in response to attempts to arouse them. According to Griffith, these babies

seem to be aware that deep sleep is their best defense against overstimulation and resultant total loss of control of themselves. However, if the babies who demonstrate this pattern of state control are swaddled and placed in a quiet, darkened, low-stimulus environment, they may begin to open their eyes and to look around.

Babies who exhibit the second pattern of state control are worse off than those who exhibit the first described pattern. These babies cannot enter a sleep state deep enough to avoid stimulation, therefore, these babies will startle, breathe irregularly, whimper, thrash about, and change color in response to stimuli. However, they will not awaken. These infants seem unable to either attend to or shut out external stimuli.

Babies who display the third pattern of state control will alternate, sometimes abruptly, between sleep and crying states. These babies respond well to being swaddled and usually will then calm down and enter a sleep state. When not swaddled, they usually become agitated and escalate to uncontrolled crying (Griffith, 1988).

The last and most common state control pattern seen in crack-exposed newborns is similar to the third state in some ways. In the fourth state-control pattern, the infant will use both sleeping and crying in an apparent attempt to control excess environmental stimulation. The infant who demonstrates this state-control behavior, if carefully managed, soon is able to reach very brief periods of alert responsiveness.

As if there are not sufficient problems created when a fetus is exposed to maternal crack use prior to birth, there is another situation that can pose a serious risk for an infant. This occurs after birth when the baby is passively exposed to crack cocaine (Bateman & Heagarty, 1989). Even when an infant is born to a mother who has not used crack at any time during her pregnancy, the potential may still exist for that baby to be exposed to toxic levels of cocaine present in their environment. Passive exposure to crack after birth occurs

when the infant is exposed to freebase smoke in the environment or when cocaine is transmitted to the baby through breast milk (Chasnoff, Bussey & Savich, 1987). This baby, fortunate to have escaped prenatal crack exposure, may be admitted later to a hospital with symptoms attributed to cocaine toxicity.

The physiological effects of passive cocaine exposure on the infant may include transient or temporary neurological symptoms and seizures (Bateman & Heagarty, 1989). Some neurological symptoms this baby may display include irritability, trembling or tremulousness, and drowsiness (Chasnoff, Douglas & Squires, 1987). If the baby has seizures, they do not seem to recur after the passive exposure to crack ceases; and if the baby is given a nurturing, crack-free environment, the continuing development of the baby seems normal.

However, infants who have been passively exposed to crack after birth must be considered at high risk from their social environment. They are at increased risk of abuse and neglect due to the disorganization that may exist within the home, as well as at increased risk of further cocaine toxicity. No discussion of the impact of crack on the newborn is complete without comment on the increasing incidence of Human Immunodeficiency Virus (HIV) infection, and Acquired Immune Deficiency Syndrome (AIDS) among pregnant addicted women (Chadwick, 1988). As HIV infection apparently has little or no effect on fertility, the population of HIV-infected child-bearing women can be expected to bear infants who are also infected (Selwyn, Feingold, Schoenbaum, Davenny, Robertson & Shulman, 1987).

A controversy exists regarding whether or not the infant whose mother is HIV positive, and who will also ultimately prove to be HIV positive, will exhibit symptoms of this infection at birth. Most researchers report that the baby who ultimately proves to be HIV positive, does not appear, on examination at birth, to have overt symptoms attributable to

this infection (Blanche, Rouzioux, Veber, DeDeist, Mayaux & Griscelli, 1987). However, some researchers believe that they can identify a syndrome they attribute to HIV infection in these babies, as is the case with fetal alcohol syndrome (FAS).

Thus, in a recent study, researchers report findings which they interpret as supporting the hypothesis that syndrome features of HIV infection can be observed in the newborn infant. These data indicate that diagnostic signs of HIV infection include growth failure, microcephaly (a smaller than normal head circumference), a prominent box-like forehead, widely spaced eyes (which are also mildly obliquely slanted and have a bluish tinge to the white of the eye), a short flattened nose, and open or patulous lips (Marion, Winania, Hutcheon & Rubenstein, 1986).

Alternately, other researchers conducting studies of HIV positive infants in New York and Africa, report conflicting data. These data indicate that the babies studied had no signs at birth which might identify them as having been exposed to HIV infection prior to birth (Embree, Braddick, Ndiyna-Achola, Low, Murithil & Hoff, 1987; Qazi, Sheikh, Fikrig & Menikoff, 1987).

Researchers do generally agree, however, that the majority of infants prenatally exposed to maternal HIV infection will develop frank symptoms of AIDS within the first two years of life, most at approximately 6 months of age (Rogers, Thomas, Starcher, Noa, Bush & Jaffe, 1987). Early symptoms seen in the exposed babies include a variety of "non-specific symptoms such as failure to thrive, chronic diarrhea, oral thrush, hepatosplenomegaly [enlarged liver and spleen] or lymphadenopathy [enlarged lymph nodes]; or...[the development of] an opportunistic infection (Chadwick, 1988, p. 194).

There is no current adequate treatment for AIDS; therefore, these infants are terminally ill and will die of their infection. The best weapon available against a growing population of children with AIDS is counseling to the addicted woman to

encourage her to reduce her risk behaviors, including her use of crack and her risky sexual practices. Less devastating, but very serious when unrecognized, is the increasing incidence of penicillin-resistant gonorrheal infection and congenital syphilis in babies born to crack-addicted mothers (Bouknight, 1990; Revkin, 1989). The best prevention for both diseases in the newborn is, of course, diagnosis and treatment of the disease in the expectant mother. As with other conditions found in these infants, however, early and adequate prenatal care is most often non-existent.

It should now be quite obvious that the crack-exposed infant is vulnerable to a multitude of early problems that may have lasting impact. This demands that interventions that address a multitude of issues must be developed and implemented in a comprehensive and aggressive manner.

Communities, supported by adequate resources, must become proactive in implementing substance-abuse prevention programs. Networks should be established to identify mothers who are at risk of bearing a drug-exposed child. These networks will need to be comprised of all community segments that can have an impact on the drug market and on the environments that pose dangers to unborn children. These networks must include systems that can assist at-risk parents to be more successful in providing a nurturing environment for their children.

All community groups, not just medical and educational professionals, will be required to meet the needs of the generation of babies born into the dangerous environments where crack use flourishes. To ignore the needs of this generation of babies is to allow the spread of this cancer within our society.

We can meet this challenge if we persevere. We have all that is necessary to stop this destruction: we have the resources, the compassion, the determination, and the creativity. By grappling with the problems faced by these at-risk parents and their unborn babies, we will learn what we need to

know to strengthen American homes, to make parents more effective, and to give new direction to our society. Thus, this serious problem may provide the foundation on which we will build a stronger nation.

CHAPTER 4

PROBLEMS THAT PERSIST

Schneider, Griffith and Chasnoff (1989) note that the human nervous system has a tremendous potential for plasticity. Therefore, they contend, neurological signs of gross motor dysfunction in crack babies may not continue beyond 12 months of age. However, the drug-exposed infant may be at high risk for continuing minimal brain dysfunction. This is because the developmental process for the crack-exposed baby "involves an abnormal nervous system reorganization that may result in behavior and learning difficulties" (Schneider, Griffith & Chasnoff, 1989, p. 35).

As the brain continues to develop throughout the first year of life, any damage that has occurred as the result of maternal prenatal crack use may not become obvious until the child needs to learn complex tasks, such as language skills (Toufexis, 1991). Thus, it becomes imperative to identify the crack-exposed infant early, to evaluate his newborn status and ongoing development, and then to provide interventions that anticipate not only any obvious early problems but also problems that may emerge with maturity.

A developmental approach to intervention seems mandatory for the crack-exposed baby. According to Schneider, Griffith and Chasnoff, health-care professionals are just now beginning to study and compile data concerning the develop-

ment of infants following prenatal drug exposure. This chapter will discuss some of these observations and will attempt to define what mechanisms and interventions may assist and enhance the development of crack-exposed babies as they grow and mature.

In addition, this chapter will discuss problems that may either persist or emerge in these infants and will offer comment regarding predictions for the status of crack babies as they reach preschool age. The primary areas of developmental dysfunction that will be discussed include motor, language, and behavior. Finally, this chapter will offer recommendations for the resources and intervention systems that almost certainly will be needed to salvage these children.

Motor Development

Nearly all of our knowledge about early infant development is based on assessment of the motor skills and reflexes the infant uses at specific ages. Therefore, an accurate assessment of the motor development of the crack-exposed infant at birth and at specified intervals throughout infancy and early childhood can serve as both an indicator of the current developmental level of the child and as a predictor of his or her long-term developmental problems.

The researchers who first studied the developmental progress of crack babies used the Motor Scale of the Bayley Scales of Infant Development (BSID), a tool commonly used to assess normal infant development (Bayley, 1969). To their surprise, the early results of testing with the BSID indicated that the drug-exposed babies "fell within the normal range through two years of age" (Schneider, 1988, p. 115). However, these researchers intuitively believed that the drug-exposed babies were not developing in normal ways, so these findings were suspect.

Schneider (1988) closely examined the BSID and determined that, while it is a useful tool for assessing normal infant

development, the BSID is inadequate for drug-exposed babies. This finding was based on several factors. First, the BSID was determined to be insufficiently comprehensive to assess the often subtle variations from the norm in the developmental patterns of babies exposed to crack, because it has too few items for each age range. Second, the BSID is primarily a motor-development checklist and does not provide a sound mechanism for conducting a thorough, qualitative assessment of an infant. Because prenatal crack exposure appears to leave the infant victims with neurological damage or deficits that may not be grossly evident until the baby is expected to perform more complex tasks, the development of these children through early childhood may appear normal unless assessed with a more sensitive evaluation tool than the BSID.

Schneider (1988) evaluated other assessment tools and eventually selected the Movement Assessment of Infants (Chandler, Andrews, & Swanson, 1980) to measure the motor development of drug-exposed infants. This assessment tool has proved more adequate as a measure of development for crack-exposed infants. However, because the Motor Assessment of Infants (MAI) is used to assess babies only when they reach 4 months of age, it is imperative that the baby also is observed and assessed from birth to 4 months. The evaluation during this time can be done by those professionals who see, and intervene on behalf of, crack-exposed babies.

While it is possible for a physician to observe or elicit all of the primary reactions or reflexes, often there is insufficient time during physical examinations to adequately calm the baby and to fully observe all of these normal reactions. Therefore, the nurse, who can observe the baby during interviews or teaching sessions with the parent and during caregiving times, is generally in a much better position to study the baby's reflexes and reactions and to record and report those observations.

Most infant intervenors, especially nurses in the hospital newborn nursery or public health nurses who visit the newborn in his or her home setting, are keenly attuned to deviations from the normal in these babies and thus are able to make an accurate neurological appraisal of the baby. This appraisal can be accomplished in an unobtrusive manner by observing the baby when the mother or caregiver is bathing, changing, holding, or feeding the baby. Nurses may prefer to perform these caregiving tasks themselves in order to observe more closely the reflexes, muscle tone, and behaviors of the baby. It is also very important to simply observe the baby during a resting or quiet time and to compare the baby's static body posture, state control, and orientation, with these characteristics during activity periods.

In addition, serial observations of the baby are extremely important. A single observation of the baby may not reflect the activities, responses, or qualities which the baby normally displays. Serial observations enable a much finer and more accurate degree of assessment. For example, when they are bombarded with stimuli while being bathed, some infants may appear very hypertonic. This same infant, when warmly clothed and held securely in a flexed position, may appear relaxed and to have normal muscle tone.

Thus, the nursery or public health nurse, or early infant intervenor, can greatly assist the physician in making an accurate assessment of the crack-exposed infant by observing and recording the following:

Skin Color and Lesions and Other Vital Signs

The nurse should carefully note deviations in the baby's color, temperature, and respiratory rate. Some mottling of the baby's skin may be within the normal range; however, continued observation of poor color may provide information about the baby which can assist the physician to detect a more serious difficulty, such as a respiratory defect.

Continuously increased respiratory rate and blood pressure is a known symptom of prenatal crack exposure. Additionally, the nurse should observe the baby for bruising, abrasions, or areas of skin redness. Such skin markings could be the normal results of a difficult delivery, or may be an indication of trauma, including willful abuse.

Muscle Tone

While it is generally difficult for the average nurse to distinguish subtle variations in infant muscle tone, in most cases a nurse can recognize generalized deviations from the norm.

Nearly every nurse can recognize hyperactive muscle tone, or the extremely "stiff" baby. Additionally, it is fairly easy to identify the extremely hypotonic, or very "floppy" baby.

If the baby seems to "rear backward" excessively when held or positioned on his back, his muscle tone is probably more excessive than in the "normal" baby. This characteristic is common in crack-exposed babies.

Posture

The nurse should observe the posture of the baby at rest. If there is minimal movement of one arm or leg, this may represent damage to the central nervous system due to maternal crack use before birth. Again, if the baby most often, or frequently, assumes a position in which his back is arched and his head is held back, the baby has increased or hyperactive muscle tone.

Basic Reflex Patterns

In all of the following age indicators for normal basic reflex patterns in infants, the ages noted are those expected in the term infant. If, however, the baby is premature, the ages at which a reflex is expected to appear or to be integrated must be adjusted for the amount of time that the baby was premature. As an example, one should not expect a baby born at thirty two (32) weeks of gestation (approximately two months

prematurely) to effectively integrate his rooting and sucking reflex until he is approximately five or six months of age (approaching the original projected delivery date), rather than the norm of three or four months of age for the normal term infant.

Rooting and sucking reflex

All normal full-term babies should display the rooting and sucking reflexes. The nurse can see these reflexes by lightly brushing the baby's cheek, or touching a nipple to the area just around the mouth. The baby will seek the touching sensation by following it with the lip and tongue. Sucking then occurs in the healthy newborn when the nipple or finger is located. These responses usually last until the baby is 3 or 4 months of age, but may not be present in the small premature baby. The absence of these reflexes in a full-term baby suggests that the baby has suffered a depressive insult to his central nervous system, perhaps by damage due to maternal prenatal crack use. Additionally, if these reflexes persist beyond the normal period of time, or reappear, the baby should receive a careful medical evaluation.

While observing the rooting and sucking reflexes, the nurse can also note the presence of possible facial or cranial anomalies or defects. Some examples of such anomalies may include: a face which seems too fat in relation to the size of the skull; a cleft lip or palate, or asymmetry of the face; and excessive salivation, or nasal discharge.

Moro reflex

This reflex is a vestibular reflex caused by a change in head position. It consists of a series of related movements, not all of which are seen in individual babies.

The series of movements commonly consist of:

- an initial response to extending the position of the baby's head in relationship to the trunk, following which the baby

is observed to extend and move the arms away from the midline of the body. In this movement the fingers tend to fan out, except for the forefinger and the thumb, which may be closed to form a "C."

- Following the initial out-stretching of the arms, the baby will bring the hands toward each other in an arc-like movement.
- Finally, the baby will return his arms and hands to a normal position of flexion.
- At times, a baby may display a slight tremor or rhythmic shaking of the limbs. While these movements may also be observed in the lower extremities, the movement in the legs is usually less pronounced.

The moro reflex is strongest during the first 8 weeks of the baby's life. Persistence of the reflex after the 6th month mandates careful evaluation.

If this reflex is missing or asymmetrical, the baby may have suffered prenatal central nervous system damage. Again, the asymmetrical reflex may indicate a paralysis, weakness of a limb or one side of the body, or a possible fracture of a collar bone or arm, which may be due to abuse of the infant.

Asymmetrical tonic neck reflex

This reflex is seen in nearly all normal infants during the first 12 weeks of life, often seen even in the sleeping or quiet baby.

This reflex appears when the baby, lying on his back, either turns his head to one side, or if the nurse passively rotates the baby's head to one side, stretches out the arm on the chin side, and flexes that arm at the back of the head. The baby is noted to assume a "fencing" position. The legs can also be noted to respond in a similar pattern.

This response is not constant among newborns, and tends to be most noted between 2 and 4 months or age. It is relatively easy for the observant nurse, while gently changing the position of the baby, or cleansing his face, to discern if this reflex is present, and if it is stronger to one side or the other, or is compulsory or persistent.

If, in serial observations of the baby who is older than 6 months of age, the baby's body response continues to be dependent on his head position, a careful medical evaluation is required.

Neck-righting reflex

This reflex is present at birth and is strongest at 3 months. It can be more readily seen as the baby loses the asymmetrical tonic neck response. In this reflex, active rotation by the baby, or passive rotation by the nurse, of the baby's head to one side, is observed to be followed by the baby rotating his shoulders, trunk, and pelvis in the same direction as the head is turned.

In the true neck-righting response, a slight delay is observed between the rotation of the head and the following shoulder, trunk, and pelvic rotation. An automatic, sudden, and complete body rotation in immediate response to passive turning of the baby's head may occur in some abnormal states and requires investigation.

The nurse may still observe this two-step righting response in a normal child into the first and second year. This reflex is seen in all normal infants by 10 months of age, and is gradually covered by voluntary activity, such as rolling over, sitting up, and/or rising from the floor, making the age of its disappearance very difficult to define.

Parachute Reflex

This reflex may be noted in as early as 6 months of age in the normal infant. The complete response should be fully present in all normal infants at 9 months to 1 year of age.

This reflex consists of the baby extending his arms over his head—and out as if to break a fall—when the baby is suspended and plunged forward and downward. The nurse may see this response when watching a father at play with his baby, as the games of "so high" or "airplane" may provide the opportunity to observe the presence and character of this reflex. If the nurse has developed a warm and trusting rapport with the baby, the baby will probably also respond with glee to this sort of play with the nurse.

Stepping Reflex

This reflex is elicited by holding the baby upright, and allowing the soles of his feet to make firm contact with the table or other surface. A normal newborn will make stepping and standing responses, but with some flexion of the hip and knee.

This crouching position gradually decreases during the first 4 months of life, and is followed by an increase in the ability of the baby to support a substantial proportion of their weight. Approximately 50% of normal infants will bear their weight while holding on at 6 months of age.

It may be normal for some babies to stand on their toes or to occasionally "scissor" or cross their legs, but consistent standing on the tip of the toes, or scissoring of the legs after 4 months of age, requires appraisal.

The stepping reflex usually disappears by 3 months of age, becoming difficult to distinguish from voluntary standing.

Grasp Reflex

The grasp reflex, in which the infant clings tightly to the finger of the examiner, even to the extent that the baby can nearly support his own weight by grasping tightly to the examiner's finger, is present at birth. The persistence of this reflex beyond 3 months may indicate central nervous system damage, and must be investigated.

When the crack baby reaches 4 months of age, an investigator can use the MAI to evaluate the baby in a more formal manner. According to Schneider (1988), this more formal evaluation will make it possible to estimate the later risk for motor dysfunction for that infant. This is done by comparing the profile on the MAI for the evaluated baby with a profile of normal four-month-old behavior.

Using the MAI to formally assess the crack babies when they are 4 months old, the examiner evaluates four key categories in a structured manner. These categories include muscle tone, the presence or absence of primitive reflexes, automatic reactions, and voluntary or volitional movements (Schneider, 1988).

To evaluate muscle tone, the examiner assesses the ability of the infant's muscles to resist passive movement. Reflex testing determines the presence or absence of primitive reflexes, and assesses how much the movement patterns of the infant are dominated by a present reflex.

The development of righting (the ability of the infant to hold the head in a midline position as his body is tilted to each side, and forward and backward) and equilibrium reactions are assessed in the automatic reactions category. In the volitional or voluntary movement section of testing, the responses of the infant to auditory and visual stimuli are assessed.

In order to compare crack-exposed babies to infants not exposed to prenatal drugs, Schneider (1988) first describes the normal 4-month-old. The normal infant at this age is very flex-

ible and very active with both upper and lower extremities. This normal baby is gaining control over both flexor (those muscles which cause flexion of a limb) and extensor (those muscles which extend that limb or body part) muscle groups.

This baby, who was born at term, can purposely reach for and grasp objects. He easily brings both hands together in the midline, can kick reciprocally, and is able to flex and extend both legs together. He is actively working on developing a body image by exploring one hand with the other, and his feet and knees with both hands.

The normal 4-month-old baby cannot yet stand alone, but when supported, will adopt a relaxed standing posture. Also, most 4-month-old infants are able to roll to one side or the other, and some are able to roll from back to stomach.

When four-month-old crack-exposed infants were assessed using the MAI, it was determined that these babies may have a risk for motor development delay 40 times greater than do babies not exposed to cocaine before birth (Schneider, 1988). Luckily, not all crack babies show delays in motor development. However, some are profoundly impacted. When deviations from the norm are seen in crack-exposed infants, the observed characteristics appear similar to characteristics seen in the baby affected with cerebral palsy.

Significant findings for cocaine-exposed infants include increased extensor muscle tone with difficulty in flexing and difficulty in moving against gravity (Schneider & Chasnoff, 1987). That is, the baby appears to be abnormally "stiff." In addition, these infants frequently display tremors of the extremities and often demonstrate a delay in integrating some primitive reflexes.

For example, the primitive walking or stepping reflex, which normally is present at birth, and absent at two months, often can still be elicited at four months of age in drug-exposed babies. The four-month-old crack baby also often displays stiff

and jerky movements; and when supported in a standing position, this baby reacts by stiffening or extending the trunk and legs, arching the back, and bearing weight predominantly on the toes.

Schneider (1988) also reports that drug-exposed babies have different volitional or voluntary movements than do normal babies. Crack babies may not be able to kick reciprocally, and because their increased extensor muscle tone limits the flexibility in the lower extremities, they are unable to bend their knees. Therefore, they are not able to explore their knees and feet with their hands and, subsequently, are hampered in their efforts to explore their body and to develop a body self-image.

When observed and tested at eight months of age, the cocaine-exposed baby continues to display some motor problems. At this age the baby probably can crawl, but is slow in moving. When supported in a standing position, the baby continues to bear weight on the toes and shows a stiff extension of the lower extremities (Schneider, Griffith & Chasnoff, 1989). Studies are being conducted to document the motor development of crack-exposed babies at one year and beyond.

Language Development

Learning to talk is a very complex task. In fact, the development of language is one of humanity's major accomplishments and one that clearly differentiates human beings from other animal species (Rosser and Nicholson, 1984). Children normally acquire the language of the culture in which they are reared. Most children master the fundamentals of the language of their culture by the time they are old enough to begin school.

Because verbal abilities are critical in order for any child to communicate with other individuals and to enjoy scholastic achievement, the child who cannot process or display verbal information is in trouble. Therefore, the acquisition of lan-

guage skills by crack-exposed children becomes a priority issue for all of their teachers and caregivers.

While normal infants do not produce words or sentences during their first year of life, they do vocalize and babble. This early babbling has a regularity of pattern and becomes more speech-like just prior to the time that the baby utters his or her first true word.

For the normal infant, the abilities to suckle well, move food about in the mouth, and finally chew, develop on a continuum as the baby gains control over mouth and throat muscles. Also, the normal infant rapidly integrates primitive reflexes, such as rooting and sucking, and thus is able to gain voluntary control over the oral musculature. For the baby to ultimately learn to verbalize well, all of these developmental tasks must be mastered in order.

In contrast, crack-exposed newborns commonly demonstrate poor feeding and sucking skills. These babies also may experience hypersensitivity of the oral musculature (Schneider, Griffith & Chasnoff, 1989) which, in turn, can add to difficulties in babies' feeding patterns. Any of these oral motor-control deficits can contribute greatly to later problems with the development of articulation skills and expressive language.

Further difficulties occur as the crack-exposed infant moves through the stages during which he or she should learn to utter sounds and to understand the meaning of these utterances. Learning the meaning of sounds is a cognitive skill that, in part, depends on how the baby relates to his or her environment and on how that environment provides the context within which the baby begins to structure language.

The crack-exposed infant, due to his poor state control and to being very easily overstimulated, often has a very limited ability to attend to auditory or visual stimuli. Often the crack baby does not react normally to any stimulus in the environment. Additionally, these babies seem unable to show strong

emotions and feelings, such as pleasure, anger, and distress (Howard, Beckwith, Rodning & Kropenske, 1989). If a baby cannot react to and process stimuli within his or her environment, that baby also may not develop appropriate ways to communicate in response to key stimuli in the environment.

Many drug-exposed babies have less ability to communicate about their needs through such interactive behaviors as smiles, frowns, cries, and eye contact (Weston, Ivins, Zuckerman, Jones & Lopez, 1989). They demonstrate "insecure attachments [to caregivers] characterized by disorganization rather than organized patterns of avoidance or ambivalence" (Howard, et al., 1989, p. 11). In fact, a very common characteristic of crack-exposed toddlers is their seeming inability to distinguish between their mother, or other primary caregiver, and a stranger (Toufexis, 1991).

Perhaps the most revealing and predictive data regarding the capability of the crack-exposed child to develop language skills are those derived from studies of the play patterns of these children. Current studies of crack-exposed children build on earlier research theorizing a clear link between the ability of a child to engage in representational play and the child's subsequent ability to acquire normal language skills (Bretherton et al., 1981; Largo & Howard, 1979).

Data on crack-exposed toddlers at the age of 18 months indicate that these children have striking deficits in their ability to engage in unstructured free play or in representational play. Play for crack-exposed children is reported as characterized primarily by "scattering, batting, and picking up and putting down the toys, rather than sustained combining of toys, fantasy play, or curious exploring" (Howard et al., 1989, p. 11). Representational play events for crack-exposed children, including activities such as playing appropriately with a doll, combing the doll's hair, stirring a pot, or wiping a table, are noted to occur significantly less frequently and are less varied than for normal children (Howard et al., 1989).

The quality of play for children exposed to crack is reported as poorer than for non-drug-exposed children. Therefore, the early play capabilities, theorized by Bretherton, et al. (1981) and Largo and Howard (1979) as necessary to the ultimate development of language, appear inadequate for crack-impacted children.

The crack-exposed toddler, who may not have used any expressive language abilities at 12 months, is reported to continue to have a severe language deficit at 18 months of age (Chasnoff, 1991). Specifically, some researchers have reported that many 18-month-old crack babies are unable to name even one object (Willis, 1991).

In contrast, normal babies at about 18 months of age are beginning to effectively use two-word combinations, or duos (Rosser & Nicholson, 1984). In fact, the normal 18-month-old is very inventive, frequently using these early two word statements to describe actions ("Daddy go!"), attributes of objects ("big truck!"), and even commands ("give cookie!").

As time passes, communication problems persist for many crack-exposed children. Additionally, some of them ultimately are diagnosed as hearing impaired or deaf. This may be due to a number of causes, including prematurity, antibiotics, or central nervous system damage, as well as to drug-induced damage. This obviously further complicates the development of language for the affected baby.

At age 24 to 30 months of age, the normal child is using multi-word sentences and is able to create three- and four-word combination utterances. While this normal child makes errors in using language, his or her speech is understandable and is an effective communication skill.

However, nursery school teachers are reporting that the oldest crack-impacted children not only present major problems in communicating verbally but also are unsure of colors and shapes; some are unable to recognize their own name

when they hear it. It is difficult to determine how much of this problem may be due to the non-stimulating or non-nurturing nature of the home in which these children have lived, but the fact remains that many crack-impacted children do have significant deficits in communication abilities.

Given all of these reported problems with precursors and corollaries to language development, it is no surprise that later evaluations of these children indicate lags in both receptive and expressive language development and may demonstrate severe difficulty with language reasoning. These deficits surely will continue to present significant problems for both child and educator when the child enters school.

A normal child first entering school possesses and uses a sizable vocabulary. Thus, the teacher works to elaborate and expand on skills which the child already possesses. However, many crack-exposed children will have severe language deficits upon entering school. Educators will need to help these children to build basic language skills, rather than to expand on existing skills.

Behavioral Characteristics

Children exposed to crack are characterized primarily by a lack of social behaviors, including non-responsiveness to nurturing and unusual irritability. These infants do not tolerate direct eye contact, apparently due in part to their deficits in orientation abilities. Chasnoff and others have described a period of time, extending from eight to ten weeks following birth, in crack-exposed newborns during which the baby frequently will display an extremely disturbed behavior pattern (Revkin, 1989).

Crack babies often seem to protect themselves from overstimulation through such behaviors as crying, avoiding eye contact, and actual closing of the eyes in an apparent attempt to shut out stimulation. In fact, once these babies reach their point of overstimulation, they will terminate all interaction by

entering into either a deep sleep state or an absolutely inconsolable crying state (Chasnoff, 1988a).

During these early weeks, many crack-exposed infants spend all of their time either crying or in a very deep sleep. They also tend to shun intimate contact, including even the steady eye contact used by a mother trying to catch her baby's eye (Revkin, 1989). Thus, their self-protective behaviors remove them even further from contact with their environment and from the persons in that environment.

When a mother or caregiver bounces a crack-exposed baby and coos, as one would do with a normal newborn, the baby arches his or her back. This behavior probably is due to increased muscle tone, but it often is interpreted as an attempt to get away from the caregiver (Toufexis, 1991). Persistent attempts by the caregiver to engage or calm the infant result in even greater arching of the back and seeming attempts by the baby to pull away from the caregiver.

Crack-exposed babies initially may be incapable of responding appropriately to their caregiver or environment in any way. Griffith (1989) reports that the ability of some crack-exposed babies to interact may actually deteriorate over the first month. This presents a difficult situation, because this is the time when it is crucial for the baby to begin to interact and bond with the mother and to begin to develop a relationship with the environment (Revkin, 1989). This inability to bond or to interact with the environment may negatively affect the normal development of other skills, including language.

However, Griffith reports that with careful caregiving assistance, using the cues of the infant to guide how and when to stimulate the baby, the baby may demonstrate some noticeable improvement in orientation and interactive abilities by one month of age. Unfortunately, the ability of the crack-exposed baby to react appropriately to the environment remains significantly poorer than for drug-free babies at the

same ages (Griffith, 1988). In fact, at one month of age, the infant impacted by crack often has not reached the functioning level of a normal two-day-old newborn (Chasnoff, 1991).

Predictions for Future Status

Medical and educational professionals are only just beginning to design programs to meet the specific needs of crack-exposed infants. These early pilot programs focus intensive intervention efforts on relatively small populations of crack-exposed babies and their families. These programs are very comprehensive, but they also are quite costly. While the early data regarding such programs are encouraging, it is uncertain whether successful pilot programs can be replicated on a large scale, since the necessary resources are not yet readily available.

Of particular interest are promising findings reported by researchers in three notable intensive intervention programs. These programs are at the Zuckerman's Womens and Infants Clinic at Boston City Hospital, the Salvin Special Education Center in Los Angeles, and the Chicago-based National Association for Perinatal Addiction Research and Education (NAPARE) (Toufexis, 1991).

Researchers at the Zuckerman Clinic reported that, when assessed at the age of one year, the first eight crack-exposed infants treated in their program all fell within the normal developmental range of behavior. As examples of their normal development, these eight infants were reported to be able to jabber expressively, to play pat-a-cake, and to walk unassisted (Cronin et al., 1991).

At the Salvin Special Education Center, the findings also are somewhat encouraging for a three-year program conducted with drug-exposed children aged 3 to 5 years. Of the 50 children who participated in this program, "more than half have been able to transfer to regular school classes, with special tutoring and counseling" (Cronin et al., 1991).

At NAPARE, Dr. Chasnoff and his associates have reported on an intensive postnatal intervention and follow-up program that they have provided to 300 cocaine-exposed babies and their mothers. Chasnoff states that of 90 drug-exposed three-year-olds tested to date, 90% showed normal intelligence, 70% had no behavioral problems, and 60% did not need speech therapy.

Thus, according to Chasnoff (1991), there are clear indications that some crack babies can catch up developmentally when given a good environment and appropriate interventions. However, most researchers also would agree that few of these babies live in a good or optimal environment. It is clear that some of these children will suffer a lifetime of medical problems associated with the congenital damage caused by maternal crack use.

One such child is Felicia, described by Toufexis (1991). Felicia is three years old and wears two hearing aids. She is reported to be nearly deaf and probably is seriously visually impaired. She is not able to sit or stand by herself, her trunk being too weak and her legs too stiff to relax. Her foster mother hopes that full-time placement in a special school will help Felicia learn how to feed herself.

Such others as Billie, also described by Toufexis (1991), appear on the surface to be perfectly healthy five-year-old children. However, as Billie and his classroom teacher read alphabet cards together, his face may suddenly cloud over and he may throw the cards down. Within seconds, he may be out of his chair and running aimlessly about the classroom.

Charlie, another five-year-old, represents those crack-exposed children who have more severe behavioral problems. For no apparent reason, Charlie suddenly erupts into frenzied episodes of thrashing, pulling his hair, biting, and banging his head against a wall. The potential for this sort of disruptive behavior is causing great concern among educators across the country.

Other preliminary findings of studies that follow the progress of crack-exposed children indicate that "they're socially not real initiators. They need [a] lot of direction. They have short attention spans, exhibit short-term memory loss, and are uncomfortable in new situations" (Revkin, 1989, p. 68).

One kindergarten teacher in New York City states that the crack-exposed children she has taught "have trouble retaining basic things. They are not sure of colors or shapes or their names." Additionally, this same teacher observes that the behavior of these children is abnormal: "Some are passive and cry a lot; sometimes they just sit in a heap in the corner. Even worse, they can be very aggressive with the other children so they are hard to stop" (Toufexis, 1991, p. 60).

Willis (1991), commenting on discussions with other nurses who provide early infant intervention to crack-exposed babies, summarized some frequently reported characteristics of crack-exposed children aged four years or so. She indicated that professionals who have early and continuing contact with these children report that they often will demonstrate:

- a low threshold for overstimulation,
- a low threshold for frustration,
- a tendency to withdraw from stressful situations,
- increased rates of hyperactivity and impulsivity, and
- increased rates of difficulty with expressive language and with language reasoning.

Willis further indicated that there is an emerging consensus among nurses and other practitioners in the field that these particular problems seem to be more common in male children. She also described apparent triggering events identified by those who work with crack-exposed infants and children, which appear to precipitate either increased impulsivity or behavioral withdrawal. Some of the described triggers include:

- an inconsistent environment,
- environments which are characterized by overstimulation,
- a lack of environmental structure,
- a new or unusual environment,
- novel tasks (especially complex tasks), and
- developmentally challenging tasks.

While Willis and other professionals now working with crack-exposed babies and children are noting and reporting some significant similarities among the children, there is not yet a large body of supporting empirical data. However, supporting research soon may be available to strengthen the observations regarding these characteristics and behavioral triggers.

Some professionals believe that early signs observed in the crack-exposed infant appear quite similar to some early indicators of cerebral palsy in infancy. These similar characteristics include persistent and interfering primitive reflexes, increased tone of extensor muscles, and dystonic movement patterns. When older, the crack-exposed child appears similar in many ways to the child with having Attention Deficit Hyperactivity Disorder, or ADHD (Singarajah, 1991). Hallmark symptoms of ADHD include inattention, impulsivity, hyperactivity, and distractibility. Additional ADHD diagnostic criteria seen in some crack children include difficulty following instructions, difficulty in engaging in quiet play, and such language disorders as excessive talking, interrupting others, and not listening (American Psychiatric Association, 1987).

Developmentalists and educators who already are skilled in working with children with cerebral palsy and ADHD may find these comparisons helpful as they work to assess and manage crack-exposed children. If studies continue to support the premise that these similarities exist, we can continue to accept the parallels between the children with these related

disabilities. Therefore, we should be able to use the methods proven for managing the infant with cerebral palsy and the ADHD child when teaching and managing the child impacted by exposure to crack. Some of these recommended strategies for home and classroom management will be explored in Part Three and Part Four of this book.

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PART THREE

MOBILIZING COMMUNITY RESOURCES

CHAPTER 5

POLICIES FOR PRACTICE

The only perfect and cost-effective way to address the issue of crack-exposed babies is to prevent drug abuse by women during pregnancy (Kaye, Elkind, Goldberg & Tytun, 1989). However, in reality, only a comprehensive societal approach, including successful educational prevention programs, effective treatment options for crack-addicted women, and an all-out effort to stem the tide of illicit cocaine into this country, can make a difference for these infants.

Crack babies require much longer and more expensive hospital care than the norm (Phibbs, Bateman & Schwartz, 1991). Phibbs and his associates (1991) estimate that in the United States, prenatally cocaine-exposed babies currently require $500 million annually in hospital care. According to Phibbs et al., the cost of hospitalization for cocaine-exposed newborns, when compared with babies not exposed to cocaine, averaged $5,200 more (a difference of $7,957 vs. $2,757 on average). Additionally, they reported that when the infant was known to have been prenatally exposed to cocaine and to other illicit drugs, the costs again greatly increased to an average of $8,450 (Phibbs, Bateman & Schwartz, 1991). But significant study provides data for only medically indicated costs incurred by the babies, costs known to be only the tip of the expense iceberg. The researchers further note that added charges incurred by the infants who become boarder babies, and thus

remain much longer in the hospital, are not possible to even estimate.

Escalating medical expenses are only a part of the problem that we must face if we are to meet the needs of the crack-impacted babies and their mothers. There are many other issues that also must be considered, including access to prenatal care for the mothers and treatment for their addiction to crack.

Unfortunately, even if the high-risk mother does seek care during pregnancy, the 1989 Select Committee survey found that "two-thirds of the hospitals queried reported that they had no place to refer substance-abusing pregnant women for treatment" (Select Committee Hearing on Children, Youth and Families, 1989). Chasnoff (1991) reminds us that one significant barrier to the provision of adequate and cost-effective medical and psychosocial services to pregnant drug-using women is the "near-bankrupt status of many states [which] is reducing services to [all women, including] the poorest and highest-risk women in our communities" (p. 1568). In addition, Chasnoff (1991) reminds us that problems with child care and transportation, poorly coordinated service systems, and cultural insensitivity also effectively prevent these mothers from accessing the care that might be available.

For most drug-using or drug-addicted pregnant women, the primary issue is not what level of care, but rather the total lack of care. In 1980, Beschner and Thompson reported survey data to indicate that only 25 programs providing services to drug-abusing women were in existence in the United States. Of even greater concern, Jones and Lopez reported in 1988 that "no preventive intervention programs have been located [in the United States] which are targeted specifically [toward drug-abusing] women and [their need for] prenatal care" (Jones & Lopez, 1988). Therefore, most of these mothers receive neither prenatal care nor treatment for their drug addiction.

As concerned professionals, we know that an absolute solution is not possible. Instead, we know that we must do what is possible given our capabilities and resources. This will require that we clearly understand the most urgent and ongoing needs of the crack baby, analyze the spectrum of available resources, identify the most critical gaps in intervention services, and systematically begin to create an effective response mechanism in the most efficient manner possible.

Philosophy for Policy Change

According to Chasnoff (1991), economics "has everything to do with health care, and the failure of our health care system to deal with the [critical] issues that plague perinatal medicine has everything to do with economics" (p. 1568). Therefore, the most cost-effective agenda for action seems obvious: we must develop programs for substance-abuse and prevention education, as well as programs to address issues of treatment and remediation. We must understand that every dollar spent to prevent addiction means fewer dollars spent to deal with the resulting problems. Thus, we need to become strong advocates for primary prevention efforts, which can shift the balance away from the need for increasingly costly and lifelong treatment of casualties.

The challenge for both policy makers and practitioners is formidable. A conceptual framework is required to support both intervention and research efforts. This framework will need to focus on helping both researchers and professionals learn how to more effectively help these infants. It seems apparent that only an inter-agency, multi-disciplinary, and multi-level social system approach will be successful. Such a systems approach requires policy support at all levels of government, and in all appropriate professional disciplines.

While an ever-increasing number of our children are impaired by prenatal exposure to illicit drugs and other factors associated with poverty, public policy currently remains nonresponsive to most of their needs! No one questions the fact that

our children must all be educated, sheltered, and receive proper medical care. *However, there is no national consensus* regarding how these services should be funded.

We know for certain that one out of five American children currently live in poverty, and that these children are experiencing all of the deprivation and danger associated with that status. However, federal funding for children's programs has increased at only "one-quarter [of] the rate of overall federal spending increases during the 1980s" (Taylor, 1991, p. 34). One major reason for this inequity in addressing the critical issues of children—of children having shoes, food, a home, and adequate health care and education—is the plain fact that such issues do not change votes! Children do not vote, and most voters do not believe that government can solve social problems. However, the good news is that the rising concern for children seems poised to finally move toward the center of national politics (Taylor, 1991, p. 34).

In June 1987, the Surgeon General's Conference on Children with Special Health Care Needs called for a national agenda for children with special health needs that would undergird our social policy for the 1990s and through the 21st century (Hutchins & McPherson, 1991).

The primary theme of that Houston conference was to create a national agenda to improve the lives of challenged children and their families. Seven steps for action were proposed for developing a family-centered, community-based, coordinated approach to care. Those steps are:

1. Pledging national commitment to all children with special care needs and their families.
2. Encouraging the development of community-based service systems.
3. Ensuring the adequate preparation of caregivers.

4. Developing coalitions through which the deliveryof services is improved.

5. Establishing guidelines by which to control costs of service delivery.

6. Encouraging adequate financing to develop adequate health care.

7. Continuing to conduct research and disseminate resultant information (U.S. Public Health Service, 1987).

This agenda was further elaborated at a follow-up conference held in Washington, D.C., in September 1988. At this second conference, representatives of many disciplines and service providers met with parents, elected officials, and community leaders. They focused on how to organize family-centered, community-based care systems in a comprehensive, coordinated, and culturally sensitive manner (Hutchins & McPherson, 1991).

These two foundational conferences provide the framework by which crack-exposed children can be better served. However, much remains to be accomplished in order to create fully responsive programs. Innovative ways to meet the needs of children must at least be supported with seed capital investments while the larger plan for action is created. It is crucial for policy makers to be aware of the universal value of all children, including those who have been exposed to crack. Any solution must deal with global realities. The illicit drug trade is an international trade—an international financial venture—and its control is an international issue. This perspective gives us both hope and dismay: hope that the international family will join us in the battle, and dismay that a global mechanism is so difficult to mobilize.

According to Greer (1991), the greatest possible unifier for global action may perhaps be the awareness of a child in need. Global responsiveness has occurred before and can occur again. One recent example is the global outpouring of concern and

assistance for the multitude of children in Yugoslavia, who were infected with AIDS. Another example was the response of the world to the famine in Ethiopia, during which so many children died due to starvation. The crack-exposed infant is becoming such a universal issue.

In order to bring about real societal changes that will help drug-exposed babies, each one of us will need to individually—and then collectively—determine to change the world of these children. We must, individually and collectively, determine to make a difference in our communities and to get local, state, and federal policymakers to respond. We need to be advocates for adequate support and resource systems to help these children. We also must share internationally. We have to share information, expertise, resources, and the urgency to meet the challenges presented by these children. We must exert a unified professionalism and commitment or we will see the problems intensify mightily for generations.

Many in our society would like to forget these children. However, we cannot forget—not until the illicit drug market is stifled, not until adequate and successful programs to treat cocaine addiction are in place, not until addicted women no longer bear drug-exposed babies, and not until our educational and health care systems are able to adequately meet the needs of these babies.

Children impacted by maternal crack addiction are not monsters or throwaways! They can be helped to grow up healthy, and their mothers can be helped to get their lives together. This situation is not at all hopeless—unless we give up before we begin!

A Strategic Community Response

The imminent and increasing presence of drug-exposed babies and children in our society requires that we prepare for the problems we predict that they will experience. We must develop a plan that encompasses all institutional networks

and resources in our larger social system. However, this plan also must be guided by careful, empathic attention to the unique experiences and needs of each individual infant and parent.

We have a great tendency to focus primarily on commonalities. However, emphasizing only the common characteristics of crack-using mothers and their babies will lead us to stereotype both (Weston, Ivins, Zuckerman & Lopez, 1989). If we fall into this trap, we risk never being able to see the potential of each child and each parent.

Therefore, we would suggest that we must never lose sight of the individuality of each child and family as we plan. Our plan for intervention will have to "recognize individual dynamics...[as well as] address barriers to formation of a working alliance..." between all professionals and disciplines currently providing services to children and families (Weston et al., 1989, p. 6).

We need to develop a plan that includes a "broker" of the multiple services necessary to adequately meet the needs of the children and families impacted by crack use. Some strongly suggest that the schools may be the most appropriate location for this "brokering" or coordination of services for all children because all children attend school. Others note that public health nurses, home health care nurses, and school nurses traditionally have been providing child- and family-centered services and may be the professionals around which more comprehensive service delivery plans and systems can be built. Whatever the specific plan, it will need to be innovative and have flexibility.

The most significant factor in today's environment is the "accelerating pace of change." According to Speth (1988), this accelerating pace of change requires us to focus on factors that have previously been beyond the scope and need of planning systems. Speth suggests that strategic management planning will enable us to cope with conflicting bureaucratic, profession-

al, and environmental factors. Strategic management planning permits us to replace our traditional, introverted perspective for delivering services in a reactive way with proactive service delivery.

A conceptual difference exists between the familiar long-range planning process and a strategic management planning process. According to Cope (1985), long-range planning is dominated by an internal perspective, tends to have closed boundaries, and is characterized as an inside-out process. Therefore, the traditional long-range planning model is too limiting to be helpful.

On the other hand, strategic management planning enables us to examine and document the environment of the crack-exposed child, while we simultaneously plan for what is happening in our larger society, now and for the future. This strategic planning process gives emphasis to the gestalt, or wider view of society, permits the concurrent pulling together of data, and enables us to arrive at major directional decisions. This process emphasizes the wider environment, open boundaries, and the interplay between all pertinent institutions. Thus, this latter process appears the most adequate to meet the needs of crack-exposed children.

It is imperative that planning for the increasing epidemic of crack-exposed babies overcomes the lack of momentum of our bureaucracies. In addition to providing for the effective management of those drug-exposed babies who are already born, it is important to anticipate the needs of infants not yet born. Any plan for action must provide for multi-disciplinary, multi-level, and cross-cultural approaches to prevent drug abuse.

In order to deal with the epidemic of crack-exposed babies, planning should occur simultaneously within local communities, across individual state systems, and at the federal level. Leadership must be identified at all three levels, and task forces must synthesize and share all available information. All groups simultaneously must petition for bureaucracies to allo-

cate sufficient resources. These resources will enable us to move rapidly from our current reactive stance to one which is preventive and proactive.

Preventive approaches include activities to slow the marketing and importation of illicit drugs into the United States. Additionally, a preventive approach includes substance-abuse education programs for all youth and successful treatment programs for addicted persons.

This broad focus will appeal to many groups. Some of the groups that should be included in planning are those interested in the economics of drug traffic and those interested in the increasing crime rates, which are associated with illicit drug abuse. Others include groups interested in stemming the increasing epidemics of sexually transmitted diseases, those interested in preventing the neglect and abuse of children born to addicted mothers, and those concerned with preparing crack-exposed children for life through adequate and appropriate education.

Chasnoff (1991) reminds us that the majority of crack-exposed children for whom we will need to provide services have not yet been conceived. Therefore, Dr. Chasnoff suggests that our most effective plan of action should include the following programs:

- Substance-abuse education in all medical schools,
- Intervention programs targeted to pregnant women who are at highest risk for drug and alcohol use,
- Prenatal medical and social service for these high-risk women, and
- Physicians becoming advocates for quality and comprehensive treatment services for pregnant drug users and abusers.

Dr. Chasnoff proposes that the physician, and the medical community at large, must assume a primary role as advocate

for the needs of the high-risk, drug-using, child-bearing woman. Traditionally, the medical community has been perceived as isolated professional specialists who have little impact on the development of social support systems. Chasnoff places the physician in a leadership role in the creation of both peripheral and integral support systems.

In meeting the challenges of the coming generation of drug-exposed children, involvement of physicians, professional nurses, all supporting health care professionals, and educators will be the key to success. These professionals are in the best position to provide leadership for comprehensive multidisciplinary intervention teams, to sound a voice that governmental leadership will respect and hear, and to denounce the forces that perpetuate the conditions under which these children are conceived and born.

As local communities, large and small, enter into the strategic management planning process to develop programs for crack-exposed infants, one major goal will be to create change within the community and school system on behalf of all compromised children (Hicks, 1990). Child advocates will provide the leadership to:

- Assess the needs of children within each area,
- Develop effective models for public and private intervention for children and families,
- Mobilize citizen support for key children's initiatives,
- Network with other advocate groups to promote the well-being of all children and youth, and
- Advocate for policies that can best serve the interests of children and families (The Colman Fund for the Well-Being of Children and Youth, January, 1987).

Thus, community professionals, advocates, and planners will assess the needs of the children to learn what resources are present in the community and what resources will need to

be developed. As planners analyze data regarding these points, they also will need to define how the necessary programs will be developed in each community of our nation.

The strategic management group or task force for each community should include the active involvement of all components of the community concerned with issues related to the crack baby. The memberships of the leadership task forces should include intervention disciplines—such as nursing, medical practice, nutrition, occupational and physical therapy, social work, psychology, and speech/language pathology—educators, community policy makers, the clergy, the judicial system, leaders of business and industry, and other individuals who are dealing with the problems firsthand.

Rural communities will be faced with unique barriers that are different from those found in urban communities. While most of us assume that the rural environment is a healthy one, the fact is that rural Americans are disproportionately poor and chronically ill (Human & Wasem, 1991).

In addition, rural areas have higher proportions of dependent persons and higher rates of fetal and infant mortality than do urban communities (U.S. Congress, Office of Technology Assessment, 1990). To further compound planning efforts in rural communities, these communities have problems with the delivery of health care at the same time that they are faced with increasing needs for such health care. More than 200 of 2700 rural hospitals have been closed since 1980 (Human & Wasem, 1991). However, the rural health-care crisis finally has become a concern at the national level. Therefore, while rural communities still need to be much more innovative and creative in devising prevention and intervention programs, federal legislation to provide rural health-care funding is finally being enacted.

According to Human and Wasem (1991), there are six elements which are central to the successful formulation of rural health policy, including policy and planning to meet the needs of crack-exposed babies.

These elements include:

- Research and data essential to providing a data base and empirical standards on which to base policy and planning decisions;
- Consideration of rural mental health professional needs, including training programs and mechanisms for reimbursement for costs of care;
- Financial access to health care for those who cannot afford care (public and foundation grants must better bridge the financial gap between the actual cost of services and what rural residents can pay);
- Improved ability to disseminate information regarding existing successful programs in a timely manner;
- The active participation of community and health professionals to keep informed regarding state and federal agency activities; and
- An improved capability for outreach, coordination, and case management activities. Such activities are crucial to better manage the isolation and estrangement of rural citizens in need of critical services, and to better link persons in need with existing services.

As all communities develop strategic management plans to address the needs of crack-exposed babies, these grassroots efforts will begin to affect both the state and federal legislative processes. The result should encourage the designation of sufficient research and other resources necessary to support local efforts. Thus, a partnership between individuals, corporate America, and policy makers at all levels must converge to aggressively battle on behalf of children victimized by addiction, poverty, abuse, and neglect.

CHAPTER 6

MULTI-DISCIPLINARY SUPPORT SYSTEMS

Because children exposed to crack have a multiplicity of both early and long-term intervention needs, the most logical approach to intervention is a multi-disciplinary team. A combination of professionals is essential to the formulation of a comprehensive service plan. However, it is more difficult to implement a practical and efficient intervention plan using the team process. Therefore, community planners should recognize the strength of a multi-disciplinary approach to service delivery for the crack-exposed infant; and they need to be aware of some of the potential of, as well as the barriers to, the development and success of such mechanisms.

One major consideration that we need to make is: How will this transdisciplinary community service model really function to deliver comprehensive services to the babies and their families?

Another issue is that of the specialized preparation of the professionals within each discipline necessary to guarantee the expertise that is required to work effectively with these infants and children. We will explore some ways in which these issues might be resolved.

Professional Preparation and Networking

The families into which crack-exposed babies are born often are impoverished, have experienced abuse and intergenerational chemical dependency, and have a multiplicity of other related problems (Howard et al., 1989). Thus, the problems faced by these families often include complex and multiple legal, social, and medical issues.

Professionals from multiple disciplines and diverse human service agencies need to be involved in early intervention with crack babies and their families. According to Bailey et al. (1990), professionals from the disciplines of nursing, medicine, allied health, public health, social work, and education must be involved. Also, children and families impacted by crack may require attention from diverse agencies that provide assistance with finances, housing, emergency food and shelter, medical care, and home-centered services. Professional nurses traditionally have been the "glue" for such service networks, and they also may provide the catalyst for models of service delivery to crack-exposed babies. However, all helping professionals and agencies must be involved.

Howard et al. (1989) report that gang-related activities and other violence are daily occurrences in the neighborhoods where crack-impacted infants and families live. As a result, personal safety becomes an issue not only for the children and families, but also for professional staff who work with the families in their homes.

Careful advance planning and staff preparation is crucial for programs in which professional staff work with addicted families in dangerous neighborhoods. Intervention team members must learn ways in which to avoid and manage danger in such areas.

One such model is the Suspected Child Abuse and Neglect (SCAN) program. Another early intervention program, PROTECT, also uses the SCAN protocol for managing dysfunction-

al and dangerous environments. Both of these projects currently are operating out of the University of Los Angeles (UCLA) Department of Pediatrics (Howard et al., 1989).

In these programs, teams of three interdisciplinary professionals work with each family. Interagency collaboration is a basic component of these programs; therefore, one very important training component is preparing caseworkers from differing agencies with strategies for successful interagency cooperation. Also, a specific interdisciplinary training program has been developed to prepare professionals to manage the unique issues presented by substance-abusing families. Some of these issues are specific to the drug culture, and others are more specific to the destructive impact of this culture on family members and the neighbors.

It is crucial to teach interdisciplinary teams not to take unnecessary risks. The training components that focus on meeting the needs of substance-abusing families in the home setting also focus on preparing the helping professional to enter the environment of the drug culture more effectively, and with greater assurance of safety. For example, Howard et al. (1989) note, that "it is essential that drug dealers and abusers not be surprised or interrupted by people [from] outside of the drug culture" (p. 10).

The professionals are taught to visit a family only at a predetermined, specified time. This provides the opportunity for that family to indicate to the broader neighborhood that an outside professional will be entering the drug-culture environment and when they will visit.

Helping professionals should visit homes in drug-impacted neighborhoods only in the late morning or early afternoon. The late afternoon and evening hours are too dangerous, due to increased drug traffic and gang activities, for the team to be present. During the early morning hours addicted parents often are sleeping late or, for other reasons, would not be adequately receptive to helping interventions.

Professional staff and teams also may need to learn the language of the street and learn how they must dress, behave, and approach the drug home and neighborhood in order to remain more safe from the potential violence there. For example, team members should not use pay phones on the street, as that is a behavior which prostitutes and drug dealers use in their business. Thus, the careless or unknowing professional might be mistakenly identified as a competitor and, consequently, be subject to harassment or danger.

Also, team members are taught that they must greet each person they encounter. This diffuses the antagonism that is present toward any person who is considered an outsider to the neighborhood.

The model programs at UCLA are staffed by dedicated and stable professionals who greatly respect the strength that is derived from the interdisciplinary approach to intervention. Within these unique programs, networking is ongoing and intense as the teams work to provide the correct combination of expertise with which to better serve the substance-abusing families and their babies.

Another innovative program, Project WIN, a Boston-based demonstration project, is currently reported as having an effective impact in meeting the unique needs of multi-problem, drug-dependent, alcoholic or incarcerated at-risk women, and their children. This project also serves women who are diagnosed as HIV positive and their children (Woodruff, Sterzin & Hanson, 1989).

Project WIN uses a transdisciplinary team to work with parents and children where they live, whether that be a home, motel, or homeless shelter. A primary function of this team is to coordinate access to community services in order to ensure that needed supports are available with minimal duplication and fragmentation.

Models such as Project WIN appear to allow for the flexibility that is needed to provide supports to these multi-problem women. Within such a comprehensive system, such services as home health support, home-based nursing care, round-the-clock support in the home, and transportation to appointments, classes, and treatment facilities are an integral part of the service model.

As one considers the skills needed by professionals in such programs as SCAN, PROTECT, and Project WIN, it becomes clear that very specialized preparation is critical if the professionals are to intervene successfully on behalf of families and children impacted by crack. Historically, many professionals—including social workers, nurses, therapists, and physicians who care for young infants and children—hav . not received a great deal of preparation specific to that ' .e However, with the emergence of increasing populations of c 'dr n who present unique and very complex intervention needs, increased academic preparation and supervised clinical experiences now are offered to these early intervention professionals.

It is a very difficult task to modify professional academic preservice programs, such as nursing education and medical schools. Typically, universities and other professional schools encounter significant barriers when attempting to change such professional programs quickly. Therefore, an important priority for upgrading the preparation of individuals who will function within the multi-disciplinary infant intervention team is a significant investment in the development and implementation of inservice and continuing education programs.

Professional organizations can offer ongoing education in many ways and at many levels, including state, regional, and national conventions and conferences. In addition, such organizations, working together with relevant governmental agencies and institutions of higher education, can co-sponsor and facilitate very powerful workshops and seminars across the

United States. In fact, it would be very easy for a consortium of related professional disciplines to collaborate in the development of a comprehensive curriculum through which to quickly address the urgent needs of crack-exposed babies.

The primary goal for such educational offerings should be for the participants to strongly embrace a shared philosophy of infant and family services. A collective commitment to the concept of team intervention, as well as a commitment to the development of skills by which to apply discipline-specific principles and procedures to very young children, will emerge.

Prosecution vs. Treatment for Abusing Mothers

Our society has not yet universally answered the questions: Should the baby who is born to the mother who is using illicit drugs be removed from her care? If the baby is removed from the care of the addicted mother, at what point should child welfare authorities remove that child from her care? and Shall the drug-abusing pregnant woman be prosecuted for the abuse to her unborn child or be treated?

The answers to these questions are not at all clear at this time. In some states, legislation is pending that would permit criminal sanctions against women who use drugs or alcohol while pregnant. In other locales, policy makers have proposed differing approaches, including mandatory treatment for pregnant addicted women (Chavkin, 1991).

Tragic occurrences, including severe neglect and even the death of babies who were in the care of addicted parents, have led some to focus more on the second question. Therefore, an active dialogue is now going on regarding when society should remove the baby from the drug-abusing mother. An issue that further compounds this debate is that adequate protective environments, including foster homes, currently do not exist in sufficient numbers in many parts of this country. Therefore, even if legislation were to mandate the removal of the infants

from the addicted parent, there may not be a better alternative placement for that child.

Some propose that crack-exposed infants must be removed from the care of the addicted mother as early as possible. Others take this concept even further, proposing that the correct answer is legislation for mandatory birth control for any female who is convicted of drug-related crimes.

Legislation to support this concept has been introduced in Kansas by State Representative Kerry Patrick. This legislation would require that convicted female addicts have Norplant birth-control implants (Willwerth, 1991). These implants, capable of preventing pregnancy for up to 5 years, are easily inserted, and are reported to be very effective contraceptive devices. Women who had such implants also would be permitted by the court to avoid incarceration and, as an alternative, to enter a treatment program for addicts. If the woman is then shown, on random drug screens, to cease her use of illicit drugs for a period of one year, she may then choose to have the Norplant insert removed.

Representative Patrick's rather radical approach, that of advocating the prevention of a pregnancy of an addicted female, is gaining the widespread support of some nurses and social service workers who currently are working with crack-exposed babies (Willwerth, 1991). Some of these professionals, frustrated by the damage they see in these newborns and by the frequent neglect, abuse, and death of these infants, are impatient with issues of civil liberties that seem to grant far greater right to the abusing mother than to her infant. According to Willwerth (1991), even the crack-addicted mothers would agree that their great need for ever more "hits" of the drug far overrides their concern for their babies.

However, infants who are removed from the care of their addicted mothers do not necessarily move into a better situation. Infants who become "boarder babies" and live for extended periods of time in a hospital or in a series of foster homes

may fail to thrive or to develop normally due to these often impersonal and inconsistent environments. These alternative environments, while they may provide safety for the baby, also may provide less than adequate levels of nurturing and stimulation.

To further complicate the issue, according to Pawl (1987), children who are removed from an abusive or neglectful home and placed on a temporary basis with a caregiver who may provide some measure of love and security, are at risk at a later date of new and more painful losses. This can occur when a child is reunited with parents who have remained essentially unchanged, except for participating in a parenting course or securing some level of employment.

Many policy makers around the country, frustrated with social service support systems that appear to have failed these infants, argue that swift and decisive prosecution of the mother is required. Proponents of prosecution of the addicted mother theorize that, as that mother is engaging in illegal behaviors, punishing her for these behaviors will prevent subsequent drug-induced damage to her unborn children. However, these proponents of prosecution are unwilling or unable to answer the question about how much more expensive is it to incarcerate a mother than to expend the necessary resources to empower her to overcome her addiction.

Recently a Florida appeals court upheld a precedent-setting conviction of a woman who smoked crack six hours before giving birth to her child (Shillington, 1991). The Fifth District Court of Appeals concluded that the drug-delivery law in Florida can be applied to cocaine-abusing women who pass the illicit drug to their babies before the birth of that child. This ruling has proved to be very controversial.

When a newborn is shown to be positive on a toxicology screening for drugs, the baby is at risk for de facto abuse. The parents are not likely to be adequate parents to the baby, and grave and ongoing problems will exist for that child. However,

a punitive approach toward the mothers may cause these women to be even less likely to seek prenatal care or treatment for their addiction. In addition, aggressive strategies to identify drug-abusing pregnant females have led to false-positive toxicology reports and have resulted in drug-free mothers mistakenly losing custody of their babies.

The approach that has the most promise of protecting the potentially crack-exposed infant is one incorporating several components. Again, in order to provide this approach, communities will need to create a multi-disciplinary intervention system for both the baby and mother.

The necessary social service support components for the mother include detoxification and treatment for her addiction, parenting support, and job counseling coupled with psychological support. The protective components for the infant include adequate and early medical care, serial assessment of development, intense support and training for the parent, and close monitoring of the progress and condition of the baby.

According to Willwerth (1991), programs that incorporate these components can be successful and can be adequately protective in cost-effective and humane ways. However, Willwerth (1991) also proposes that such a supportive approach to program development for addicted mothers and their babies should be accompanied by the threat of legal intervention and investigation if the mother is non-compliant or is found to be using drugs on random drug-screening tests.

Treatment Systems for Crack Addiction

We can be encouraged by one issue as we consider the varying aspects that are crucial to intervention programs for crack-exposed babies and their families. This issue is the very real possibility of developing successful and cost-effective treatment programs for persons who are addicted to cocaine, including crack.

Some propose that not only is it possible to recover from addiction to cocaine in any form, but, in many ways, it is easier to overcome addiction to cocaine than addiction to alcohol or heroin (Rawson, 1990). While treatment success rates are reported to be lower for the very poor ghetto crack users than for middle-class cocaine users, early reports of success rates for even this addicted population are still significantly high. Therefore, according to Rawson (1990), "there is no reason for the public and policymakers to despair about the prospects of successful treatment [for cocaine and crack addiction]" (p.10).

While withdrawal from alcohol addiction requires medical supervision, the cocaine addict may withdraw from the drug alone and without any support (Rawson, 1990). The withdrawing cocaine addict may want to sleep all of the time and may be irritable, but he or she rarely will be in physical danger or need medical attention.

Thus, Rawson proposes that approximately 25% of the estimated 2 million crack abusers in the United States would be able to stop using the drug with the support only of family, clergy, or a self-help group. However, he also realistically reminds us that another 25% of crack addicts are considered hard-core abusers with other overwhelming problems, such as mental illness, chronic unemployment, and involvement in criminal activities, and are persons who will never be able to stop using crack.

Theoretically, this leaves an estimated group of approximately 1 million current crack abusers, or 50% of those addicted, who could benefit from an appropriate treatment program. Such a program, tailored to match the needs of the cocaine addict as he or she moves through recovery, will need to be comprehensive; however, it can remain relatively inexpensive. This is because the lengthy nature of the recovery process for crack addiction can be best addressed by an outpatient, rather than an inpatient, approach (Rawson, 1990).

Most inpatient addiction treatment programs are designed to provide care for only a relatively short period of time, generally 21 or 28 days. However, this short length of time is insufficient to adequately treat the person recovering from cocaine addiction. Thus, an outpatient treatment model, which can be responsive to the needs of addicted individuals over a longer period of time, is seen to reflect much higher, and much less expensive, success rates for recovery from cocaine addiction.

One such outpatient treatment program model is operated at the Matrix Center, founded in 1983 in Beverly Hills, California. Richard Rawson, the director of the Matrix Center, reports that the center has treated more than 1,800 cocaine addicts as outpatients since 1983. All counselors hold at least a master's degree in mental health, in contrast to other program models in which the staff may be comprised largely of recovering addicts. The outpatient model at the Matrix Center is an example of a comprehensive program which includes individual, group, and family therapy.

The Matrix Center provides care to persons from all socioeconomic groups. The cost of the entire course of treatment is $4,500. However, for indigent persons, the center has established a sliding fee scale. At the lower end of this scale, treatment costs are only $25 per month.

According to Rawson (1991), treatment for cocaine addiction needs an extended period of time because there are five different stages in the recovery process, which extends over several months. The first stage, "withdrawal," is typically quite short, lasting from 2 days to about 2 weeks. During this time, the person feels irritable, depressed, and anxious and craves cocaine. However, during this stage the individual also will sleep excessively.

The second stage is termed the "honeymoon." This stage, occurring between the third and seventh week of non-drug use, is characterized by an unusually high energy level and a feel-

ing of being "cured." However, this stage is followed by one called "the wall."

The wall occurs between 46 and 120 days after the addict ceases using crack and presents the major barrier in the recovery process. Also, this important stage in the recovery process from cocaine addiction occurs after most inpatient programs have been terminated for the addicted person.

During the stage of the wall, the person is very tired, suffers from insomnia, and is depressed and anxious. In addition, this stage is characterized by an inability to feel pleasure (anhedonia). The person feels as if things will never be better, and as the craving for crack returns, the addicted person is very vulnerable to relapse.

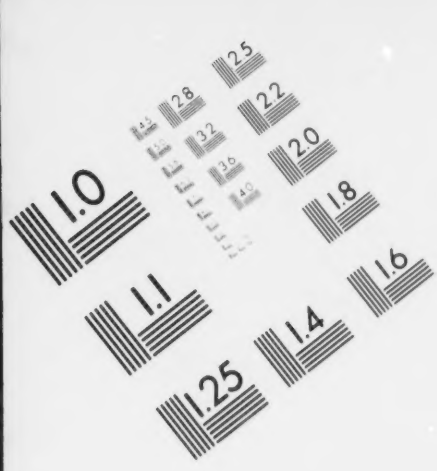
After the individual refrains from using crack for about four months, the fourth state, adjustment, begins. Cravings for the drug now decrease, and depression lifts. The person now begins to feel good about having "the wall" behind him or her. However, problems with boredom and loneliness may cause him or her to return to high-risk behaviors, including using alcohol or other drugs, unless adequate support is available.

The fifth stage, resolution, usually begins after six months of non-drug use. At this time, the recovering addict is able to develop new interests and may embark on a more balanced life style.

Although outpatient care takes six months or more, it still is more cost effective and also more appropriate than inpatient care for the crack addict. The typical inpatient treatment program ends after approximately 28 days, a very early point in the recovery process from cocaine addiction; and inpatient treatment is quite costly, ranging from $5,000 to $20,000. The cost of outpatient programs, such as the one at the Matrix Center, range up to approximately $4,500 on the high side. And outpatient programs are capable of being much more responsible over the extended period of time necessary for the

recovering cocaine addict. In addition, according to Rawson (1990), outpatient treatment is generally less disruptive for the recovering addict and permits the person to learn to manage better the addiction in the environment in which the problem developed.

Models such as the Matrix Center have much merit and have documented case successes. Such programs should be considered seriously as a cost-effective option in any comprehensive strategic plan for addressing the issues of crack addiction and the associated issue of crack-exposed babies.



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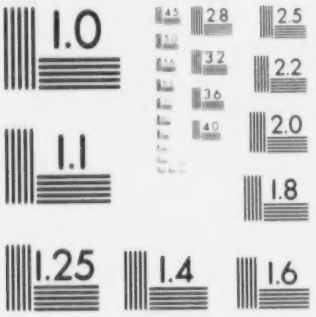

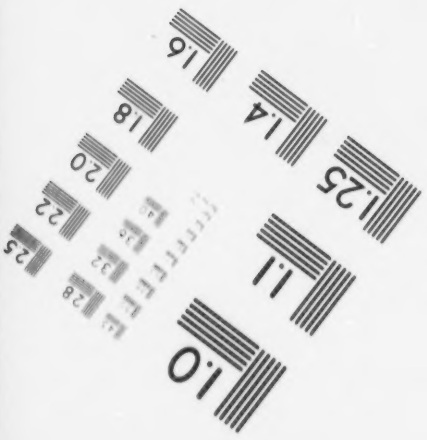

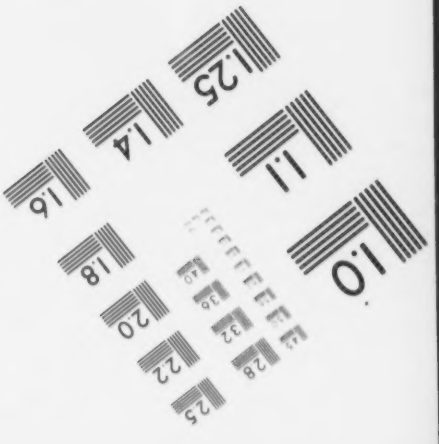

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CHAPTER 7

CARE SYSTEM FOR CRACK-EXPOSED INFANTS

While not all crack babies are premature, many are. These tiny infants present challenges to the skilled physician, as well as to all other members of the neonatal (newborn), intensive-care treatment team. The crack-exposed neonate, if very premature and very small, requires extraordinary care to have even a chance to survive, become healthy, or approach normalcy.

The early days for this baby are often spent in a newborn intensive-care unit. There, the tiny body is usually entangled in a maze of wires and tubes. If very premature, this baby may hover between life and death for three or four months. During this time, even the treatment protocol itself presents dangers to the baby. Fragile systems of the tiny body may be damaged, or may not develop as they should. This is due to the priority given to save the life of the baby and, in so doing, perhaps sacrifice other delicate tissues. At particularly high risk are the central nervous system and the eyes. In addition, the capability of the baby to bond with and to learn to trust the touch of the caregiver is compromised.

Therefore, survival for this baby may not be a true victory but, instead, one tarnished with additional concerns. If the baby survives these early days of life, he may now require ongoing, specialized care for problems created in his early struggle for survival. These dangers all are in addition to the

need to overcome or compensate for the effects of exposure to crack before he was born.

The actual diagnosis of prenatal crack exposure may not be easy to achieve. For some babies, their hyperirritability, increased tremulousness, and irregular sleeping patterns will give clues. For others, the mother may honestly provide information regarding her drug use during pregnancy. In some instances, if the maternal drug use occurred immediately prior to the delivery of the baby, a drug-screening test will reveal the presence of the crack in the infant.

Because of the inconsistencies inherent in the above indicators for diagnosing prenatal exposure to crack, all hospitals should adopt a protocol for the management of suspected drug-related prenatal child abuse and neglect. The University of California at Los Angeles (UCLA) Medical Center has developed such a protocol for the period of time immediately surrounding the birth of the baby (Chasnoff, 1988b). The major components of this protocol are described below in an effort to identify some of the more important considerations in managing suspected and actual prenatal child abuse and neglect.

Protocol for Management of Drug-Related Child Abuse

The model protocol used at the UCLA Medical Center contains sections to define the psychosocial high-risk indicators in each area: the prenatal, delivery room, and postnatal arenas. Chasnoff (1988b) describes this protocol as helpful for diagnosing the baby at increased risk due to maternal drug abuse.

Pertinent considerations in each period include the following risk indicators.

Prenatal Risk Indicators

- The mother conceals or denies the pregnancy.
- The mother unsuccessfully sought or attempted abortion.

- The mother seeks, then reverses the decision to relinquish her infant for adoption.
- There is a history of severe marital discord.
- The mother makes no preparation for the birth of the baby.
- Either parent has a history of serious mental illness, institutionalization, current depression, or repeated foster-care placement.
- Either parent has a history of violent behavior or serious prison, jail, or juvenile detention.
- There is a history of previous abuse or neglect of another child in the family.
- The mother consistently misses appointments and is non-compliant.

Delivery Room Risk Indicators

- The mother displays a hostile reaction or avoids verbal or non-verbal contact with delivery room personnel, makes inappropriate verbal comments or makes disparaging remarks, makes no eye contact with or pulls away from her baby following its delivery.
- The mother is disappointed over the sex or appearance of the infant.
- Negative interaction is observed between the mother and her baby or a significant other.

Postnatal Risk Indicators

- The mother displays a lack of behaviors indicating maternal attachment and bonding with the infant, including:
  (a) The mother does not want to hold, feed, or name the baby.
  (b) The mother avoids eye contact and touch.

(c) There are no signs of the mother cuddling or talking to the infant.

(d) The mother makes disparaging remarks about the baby.

(e) The mother cares for her baby in an inappropriate manner.

(f) The mother spanks the baby or displays overt anger toward the infant.

- The mother tries to sign her sick newborn out of the hospital against advice.
- The mother suspiciously departs early from the hospital.
- The mother displays postpartum depression.
- If the mother is discharged prior to the infant, the maternal visiting pattern is inadequate.
- The mother is reluctant to come for the infant when his or her discharge is approved.

Within the protocol, in each period, if the mother has a history of drug or alcohol abuse but currently has no symptoms of such abuse and appears to be psychosocially at low risk, no action is indicated. However, if the mother shows symptoms of drug or alcohol abuse or is believed to be psychosocially at high risk, a toxic blood screen is ordered, in some situations without the consent of the mother. If the screen is positive for alcohol, illegal drugs, or for prescribed drugs used inappropriately, the mother and infant are referred for clinical social work to a public health nurse and/or a chemical-dependence or child-abuse team for intervention.

If the father of the infant or significant other of the mother is suspected of drug or alcohol abuse, the case is referred for follow-up monitoring and assessment of the home. In these cases, initiation of a referral for intervention and ongoing counseling may occur.

If the baby is born and displays symptoms of prenatal drug exposure, the baby is referred to social services, to the child abuse team, and, if indicated, to child protection services. In addition, discharge planning is begun to better ensure follow-up care and intervention for the baby.

The emphasis in each period is to direct efforts toward counseling the parents and toward making appropriate referrals for treatment or intervention. Only in extreme and dangerous situations is the case reported to child protection services for intervention.

If all professionals who come into contact with the pregnant woman or her significant others would assume responsibility for following a protocol similar to the one defined here, and for identifying the psychosocial indicators of risk for each infant, the chances for earliest intervention and protection for this child are increased.

Specialized Care of Newborns

Characteristics that are specifically unique to the crack-exposed baby include: behavioral disorganization; a low threshold for overstimulation; neurobehavioral difficulties, including poor regulation of states of arousal and poor interaction capabilities; and sleep and feeding-pattern problems. Interestingly, according to Dr. Griffith (1988), these infants also almost always appear to have very great difficulty, reacting with obvious distress, in managing the visual stimulation that results when the baby is confronted by another human face, and specifically with a steady face-to-face gaze.

Therefore, primary goals of therapeutic intervention for the newborn crack baby must include managing the baby's hyperirritability and increased extensor muscle tone, as well as increasing the length of time of the baby's periods of alertness and calm. The achievement of these goals will then facilitate increasingly more appropriate infant-caregiver interactions (Schneider, Griffith & Chasnoff, 1989). Other goals include improving the

baby's feeding patterns and skills and assisting the caregiver to more successfully manage and handle this baby and, thus, to help the baby to interact better with his or her environment.

Successful efforts to improve feeding patterns and to decrease facial and oral hypersensitivity are very important. Any very early efforts to normalize the oral and facial musculature, at an age when early and complete brain development and myelination has not yet been accomplished, may even play a major role in the eventual facilitation of more normal speech patterns.

According to Farber (1974), it is always better to assess and intervene into a problem while the baby is very young, rather than to try to undo abnormal patterns that may develop and strengthen over time. Also, according to Dr. Farber (1992), it is very important to identify and to work to change abnormal motor patterns that, without such assistance, may persist long past the normal developmental sequence for that behavior. It is difficult, if not impossible, to change abnormal behavior patterns that are allowed to persist as the child matures.

The occupational therapist can provide the primary leadership in the articulation of programs developed to meet the specific needs of individual babies, especially regarding feeding patterns, positioning, and motor patterns. The speech and language pathologist should work closely with the intervention team to ensure that any early intervention program also builds a foundation on which to facilitate later speech and language patterns.

Any professional who participates as a member of an early intervention team or who treats the babies, including physicians, nurses, therapists, social workers, child-care workers, and early childhood educators, should study and understand:

- Fetal developmental patterns.
- Normal infant growth and developmental milestones and conditions.

- How to adapt the environment for the crack-exposed infant in order to approximate the environment of the normal newborn who exists within a "normal" family environment.
- Newborn anatomy as it differs from adult anatomy.
- Current research findings for the at-risk population of prenatally crack-exposed babies.

In addition, all members of the professional intervention team must conscientiously compile accurate and complete data regarding treatment efforts and results. Intervention must be cost effective; therefore, all professionals who intervene with crack babies have an obligation to continue to test treatment techniques to ensure their effectiveness and to enable replication of successful and cost-effective strategies in a timely fashion.

The development of any treatment plan for a crack-exposed newborn must be grounded in a thorough evaluation of that individual baby. This evaluation should include assessments of reflex development, the behavior patterns of the baby, and the current developmental status of the baby. An assessment of the baby's feeding patterns, including breathing patterns, internal oral function, rooting, sucking and swallowing patterns, jaw stability, and feeding position, are crucial to successful planning for intervention.

While we know that the crack exposed baby is hyperirritable and very easily overstimulated, the evaluator and caregiver must overcome the impulse to not handle this baby for fear of upsetting him. Instead, learning about the proper handling of the baby, based on careful observation of the cues given by each individual infant, is essential to helping each baby to improve feeding patterns, state control, and appropriate motor patterns (Schneider, Griffith & Chasnoff, 1989).

All members of the intervention team can learn to assess these babies for reflex patterns, muscle tone, and the presence

or absence of normal feeding patterns. A very adequate early assessment of such characteristics can be accomplished during normal care activities, such as bathing, feeding, and dressing the baby. According to Farber (1974, 1992), the intervention evaluator can easily observe the reflex and motor patterns of the infant at rest, as well as during evaluation activities, and also can observe and assess the baby for signs of abnormal distress.

On evaluation, it is essential to determine if the baby is an obligate nose breather (making sucking with lips sealed impossible), mouth breather, or both nose and mouth breather. Breathing patterns are observed by gently covering or restricting first the nose and then the mouth. The evaluator must be very careful to not cause the baby to become too distressed during this observation; if the baby is very irritable, this assessment might well be left to the end of the evaluation session.

The internal oral function is assessed by observing tongue movements at rest and during spontaneous behavior and by observing the presence, strength, or absence of the bite and gag reflexes. The bite reflex is normally present at birth, with the baby momentarily biting down in response to anything placed on the tongue. If the bite reflex is so strong that it persists and interferes with feeding, it is considered abnormal. A strong thrusting movement of the tongue, wherein the baby pushes food or the nipple out of the mouth and consequently has difficulty sucking and swallowing, is also abnormal. However, some tongue thrust is seen in some normal very young babies.

If either a strong bite reflex or tongue thrust are present and persistent, a more normal feeding pattern can be achieved if food is introduced into the side of the mouth, or into the cheek pockets, rather than into the midline of the mouth. This avoidance of introducing food into the midline of the baby's mouth or onto the tongue can assist the infant to learn to voluntarily override these interfering oral reactions.

The gag reflex is also normally observed at birth. The baby should be observed during feeding to see if he gags only on the nipple or also on food in the mouth. If the baby gags on the nipple, a smaller or more soft nipple may help the baby to successfully inhibit the gag reflex. However, if the examiner can elicit a gag reflex with only light pressure on the tongue tip or the reflex continues to interfere with feeding, it is considered a hyperactive reflex. In this event, a specific therapeutic program should be developed to inhibit this reflex.

If the baby initially is fed using a naso-gastric or gavage tube, his gag reflex may be abnormally depressed. Therefore, as the transfer is made from tube feeding to oral feeding, very small amounts of liquid or cereal should be introduced initially. Also, the baby should be held in an upright, partially flexed position for feeding. The gag reflex usually becomes normal once the feeding tube is removed and oral feedings are instituted.

Assessment of the baby's rooting, sucking, and swallowing reflexes are very important. These reflexes are all normal behaviors or reactions in the full-term, healthy newborn. However, if the rooting reflex is not inhibited after the baby locates the food source, this reflex may interfere with the sucking pattern.

Evaluations will assess whether the rooting reaction is inhibited once the baby starts to suck, or whether the reflex interferes with the intake and swallowing of food. Again, when these reflexes are strong and persistent, the occupational therapist should prescribe a program to eventually inhibit these abnormal patterns. On the other hand, if these reflexes are weak or absent, the treatment program must incorporate techniques that will stimulate the normal development of these necessary reactions. The techniques by which these reflexes are either inhibited or stimulated require specific training to prescribe; however, they are not complex and can be implemented by any trained and monitored caregiver.

In assessing the sucking and swallowing reflexes, it is important to note the strength of sucking and whether the baby is able to form a complete seal around the nipple. In some crack-exposed infants, the sucking and swallowing reflexes may not appear to be present at all. These babies need to be tube-fed until the ability to suck and swallow is present. As the sucking reflex begins to appear and strengthen, the baby can be observed to try to suck on his own hand or on anything that touches on or near his or her mouth, including the gavage or feeding tube.

The stability of the infant's jaw during feeding and at rest should be observed. The normal baby will resist any attempt to pull down gently on his chin. If either strong resistance or no resistance to the downward tug on the chin is seen, the jaw stability is not at a normal level, and sucking and swallowing may also be difficult for the baby.

Given correct guidance and adequate support, the caregiver can learn to successfully assist the baby to overcome any observed abnormal oral sensitivity. With proper positioning and handling coupled with gentle, but firm, tactile stimulation around the face and within the mouth prior to feeding, the caregiver can help the baby to overcome increased oral sensitivity and to experience an increase in appropriate feeding patterns.

It also is critical to evaluate the normal position and muscle tone of the baby, both at rest and while the baby is being handled during care giving. Many crack babies will display abnormal motor patterns that are incompatible with successful isolated movements of the arms, head, jaw, tongue, and lips.

For example, many such babies can accomplish sucking only if the increased extensor tone displayed by the baby is controlled by therapeutic positioning in which the baby is held with hips, knees, and neck in a flexed position. Therefore, those who care for the baby must be taught how to position the

baby carefully so that the infant is assisted to function in a more normal manner.

It is very important to avoid applying any touch or pressure to the occiput, or back of the baby's head. Any such pressure, no matter how slight, may tend to set off abnormal and difficult-to-manage reflex patterns for the baby. When this occurs, the baby will have an increased tendency to hyperextend and arch the back, thus making voluntary feeding and behavior patterns difficult, if not impossible.

The majority of crack-exposed infants will display increased extensor tone early, with lessening of the hypertonia seen in more than 50% of cases after about 6 months of age. The hypertonic babies usually can be positioned comfortably with the entire spine, including the neck and head, flexed away from the hyperextended position. This position can be very helpful and comfortable for the baby, both in a supported sitting position and in a side-lying position (Schneider et al., 1989).

Initially, the baby may need to be swaddled or closely wrapped in order to be maintained in these semiflexed and more relaxed positions. The warmth from the blanket appears to provide an additional calming effect on the extensor motor behavior. The flexed position breaks up the extensor tone, facilitates midline orientation and hand-to-mouth behavior for the baby, and decreases tremors of the arms and legs. Slow rocking, in addition to swaddling with a blanket, may also be needed to calm some infants.

Specific stimulation techniques using sensory input, such as olfactory (smell), gustatory (taste), and auditory (hearing) stimuli, can have the effect of calming irritability and inhibiting hyperactive oral reflexes. Generally, if the baby sees cool colors; hears soft, even voice tones; tastes warm, pleasant fluids; or smells pleasant odors, the baby will become more calm and less hyperactive.

If the baby was born prematurely, it may be helpful to play a tape recording of the heart beat of an adult. Since the fetus probably heard this sound prior to birth, and the heart beat is an even, rhythmical sound, this will probably calm the infant.

Schneider et al. (1989) describe another unique form of management for the crack-exposed baby. This is the use of neonatal hydrotherapy. Hydrotherapy techniques used with newborn infants usually soothe and relax the babies. In turn, this helps the infants to have improved posture, muscle tone, ability to flex and rotate the trunk, and hand-to-mouth activity and feeding behaviors, and will help infants to develop a more appropriate behavioral state.

The baby is placed in a small tub filled with water that is warmed to between 99 and 101 degrees Fahrenheit. The baby is securely supported but is allowed to experience the buoyancy and warmth of the water for several minutes. Schneider and his associates recommend that an overhead radiant heater be used to decrease temperature loss during this treatment. Additionally, the baby's vital signs, including pulse rate, respiratory rate, and body temperature, must be monitored very carefully to ensure that the procedure is not having an adverse effect on the baby.

If this technique is observed to be beneficial for the crack-exposed infant, it easily can be taught to responsible parents or caregivers for use in the home setting.

Perhaps the characteristic of the crack-exposed infant that poses the greatest concern for caregivers is the apparent inability of the baby to respond to, or interact with, the face or voice of the caregiver. Schneider et al. (1989) argue that it is of "paramount importance in enhancing normal infant development as well as ensuring a strong parent-infant bond" (p.31) that parents or caregivers be educated about how to encourage the baby to respond in more normal ways.

According to Griffith (1988), both parent or caregiver and baby must have "the behavioral repertoire and the adaptability to respond appropriately to the stimulation provided by the other" (p. 105). Thus, the parent or caregiver must learn to modulate the stimulation level to which babies are exposed in order to fit the information-processing needs of that particular baby. In the event that the caregiver is unable to fulfill this need for individual modulation, that baby almost certainly will be exposed to overwhelming experiences.

Dr. Griffith has indicated that many crack-using mothers have very low levels of self-esteem and often believe that the unconditional love they think they will receive from their baby will fulfill their own needs for affection. However, when confronted with their irritable and non-responsive baby, these mothers face even greater frustration in fulfilling their own needs. Therefore, it is especially important that each mother not only is taught strategies for reducing the irritability of her own baby and for increasing her ability to respond to that baby, but is given adequate support to ensure that she will be successful.

Schneider et al. (1989) point out that one very good way in which the parent or caregiver can learn about the strengths and unique characteristics of their particular infant is to observe any session during which the baby is assessed. These are opportunities for the caregiver to observe a professional managing the distress signs that the baby may display, and they also are valuable opportunities for the professional to model appropriate management strategies. In addition, during these sessions the professional can encourage the mother in her attempts to more successfully manage and stimulate her baby. The mother or caregiver who learns to stimulate the baby appropriately also receives more satisfaction from her nurturing strategies and, therefore, will feel more positive toward the baby. In turn, the baby is more responsive to the attention given by the caregiver.

Common cues which the crack-exposed babies will display to indicate approaching overstimulation include sneezing, hiccuping, yawning, gaze aversion, frowning, spitting up, color changes, and crying. It is crucial that each caregiver is taught to be aware of the particular cues displayed by her own baby and how to respond quickly to prevent the distress from escalating.

Caregivers need to learn to avoid situations in which the baby reaches a frantic crying state, as this state is very difficult to manage. If the baby should reach a frantic crying state, it is important for the caregiver to know how to quickly calm the baby. The longer the baby is allowed to cry frantically, the more difficult it becomes to calm the baby. As the caregiver learns to recognize early cues of distress in the baby and to stop whatever stimulation is occurring, the baby will learn to maintain or regain control and will increase his or her ability to respond more successfully to environmental stimuli.

Calming strategies that Schneider, Griffith and Chasnoff (1989) recommend for the crack-exposed infant include: swaddling the baby; offering a pacifier if the baby is able to suck well; holding the baby closely without making eye contact; using slow rhythmical input, including rocking in an upright position; and visual, auditory, and tactile stimuli, such as gentle stroking.

When the baby is alert, the caregiver can attempt to swaddle and hold the baby in a face-to-face position without speaking to the baby or moving too quickly. If the baby appears to remain comfortable, the caregiver then may either speak to the baby in soft, rhythmic tones or move slowly in front of the infant without speaking.

If the baby continues to remain calm, the caregiver may attempt to slowly unwrap the baby in order to give the infant some experience in controlling body movements on his or her own. If the baby should begin to display cues of stress, the

caregiver should reswaddle the infant to assist him or her to regain control.

If the face-to-face position is too stressful for the infant, the caregiver is taught to hold the baby securely in an upright position with the baby facing away from the caregiver. In this position, the caregiver can continue to speak softly to the baby and is able to assist the baby to control head, arm, and leg movements.

It is important that the caregiver is taught to very gradually increase the amount of interactive visual, auditory, and tactile play with the baby. Again, it is crucial that the caregiver learns to use the cues displayed by the individual baby as the guide to what that infant can or cannot tolerate.

Schneider et al. (1989) caution that any methods to calm the crack-exposed baby should be used only when necessary and only for as long as necessary. Thus, as each infant learns to gain state control, such methods as swaddling, rocking, and hydrotherapy should be withdrawn gradually, and used only when the baby seems unable to cope without such supports.

When the crack-exposed newborn is carefully assessed and intervention plans are based on this individual assessment, these babies can make progress; and most eventually can learn to use self-calming abilities. Therefore, the continuing challenge is to transfer successful management techniques to the home environment, to assist the parents or caregivers to provide appropriate care and stimulation, to monitor their efforts, and consequently, to avoid compounding the problems of this at-risk baby.

Griffith (1988) notes that the parental training efforts associated with his practice have been limited primarily to opportunities for professional staff to model appropriate management techniques for the caregivers. These modeling and feedback sessions have occurred during or immediately following developmental assessments of the babies at the clinic.

Therefore, experience with successful intervention in the home setting has, to date, been limited.

In addition, the team of professionals who work with Griffith have not yet reported any systematic analysis of parent training effectiveness. However, they do report that some of the caregivers describe improvements in their interactions with individual babies and that some of the babies are observed to show improvement in their abilities to organize and respond to their environment, apparently as a result of teaching the caregiver how to manage this specific infant.

Griffith (1988) and his associates realistically admit that the very limited time they are able to spend with the caregivers during the early weeks of the infant's life is not sufficient to be totally successful in teaching the caregiver how to interact productively with the baby. Thus, Griffith emphasizes that "what is needed is a more comprehensive maternal training program with at least weekly sessions with a developmental specialist who could continuously fine-tune and reinforce the [caregiver's] responsiveness to [the] infants' cues" (1988, p. 113).

Griffith proposes that this weekly schedule of parent or caregiver training should be reinforced with the "medical, social, and emotional support which could be provided by a multi-disciplinary team of pediatricians, nurses, social workers and therapists" (1988, p. 113). This is very sound advice; and as communities plan for the care of the crack-exposed infants, such a support system is integral to the development of any treatment or intervention plan.

Managing the Infant and Toddler

As the crack-exposed infant develops and matures into a toddler, the primary management goal is to help the child learn to move appropriately throughout his or her environment (Schneider et al., 1989). As this goal is achieved, the child will also experience enhanced psychosocial and cognitive

development. Schneider, Griffith and Chasnoff (1989) have offered the best description to date of successful management strategies for these children. Practical suggestions include strategies for positioning, carrying, and handling the child. Schneider et al. note that it continues to be very important for the professionals who work with the caregivers to assist those caregivers to become increasingly skilled in using these suggested strategies.

As indicated previously, one of the primary difficulties these children continue to face as they grow is their increased extensor muscle tone, which can greatly interfere with the acquisition of many developmental skills. When the child is positioned on his or her back, such developmental behaviors as the ability to lift the legs and to kick reciprocally are compromised. However, the caregiver can be taught to help the child to become more functional even while positioned on the back. When positioning the child on his back, the caregiver should gently lift the pelvis and flex the legs toward the chest. This often allows the child to overcome the increased extensor tone and to move the lower extremities more normally. Rotating the child's legs from side to side may further decrease abnormal extensor tone. However, the child should not be left on his back for any extended length of time.

The most beneficial position for the crack-exposed child with increased extensor muscle tone is prone, or on his or her belly. This position generally is much more functional than any other, and the baby should be placed on his belly often and for increasingly longer periods of time. In this position the child should be encouraged to move about and to pivot by reaching for colorful toys or objects. As the child experiences success in moving about in the prone position, progressing to creeping and crawling behaviors will be easier.

From the time the child is born, the caregiver should support the child in a sitting position for short periods of time to permit the child to experience this position. However, long

periods of time in sitting positions for the immature baby should be avoided, as the trunk muscles are not yet developed to the point where the baby can sustain the erect position. At about 5 months of age, the infant will be sufficiently strong to assume a sitting position for longer periods of time.

When supported in a sitting or standing position for extended periods of time, some crack-exposed babies will experience an increase in extensor muscle tone and an associated backward thrusting behavior. The uncontrolled backward thrusting that results from increased extensor tone cannot be allowed to occur. If it continues, the child's increased extensor tone will worsen. When backward thrusting occurs or is anticipated, gently bending or flexing the child forward at the hips can prevent this behavior.

When the child is placed in a sitting position to encourage play or feeding behaviors, it is important that the chair or seat fit the child well. The chair should permit the baby to sit squarely, with both feet firmly supported on the floor or on a foot rest. The height of the play or feeding table top should permit the child to rest his lower arms in a relaxed position at the elbow level.

When seated in this properly supported sitting position, the child will experience better balance and will have an enhanced ability to develop fine motor skills. If the child is not properly supported in a seat that fits, he or she will have great difficulty developing the coordination necessary to learn self-feeding skills or to manipulate toys.

The baby should never be placed in a walker or jumper. Using a walker or jumper increases extensor muscle tone. Such devices not only may impede the normal development of the baby, they also are the cause of many injuries to babies each year. Therefore, the baby would benefit far more from increased opportunities to practice moving about and crawling in the prone position on the floor or other safe place.

As crack babies mature and strengthen, they appear to enjoy being supported in a standing position, as do all babies. Supporting the baby in this position permits the infant to use their increased extensor tone appropriately. However, while supported standing allows the baby to experience upright weight-bearing, it also may reinforce any abnormal muscle tone and movement patterns. Therefore, this position also should be used for very limited periods of time.

To assist the baby to counteract any abnormally strong extensor muscle tone, the caregiver should carry the child in a flexed position, resting on the caregiver's hip with the adult's arm providing support under the child's thighs. In addition to assisting the child to bring his or her hands to the midline and to gain improved head and trunk control, this position also helps the child to develop such fine motor skills as reaching for and grasping objects.

Parents or caregivers who successfully manage any abnormal muscle tone or reflexes their child may have will probably be more successful in helping the child to interact better with the larger environment. However, this child may continue to require more sensitive handling than the norm and may continue to be unable to manage quick, rough movements. Although some problems may persist, if the caregivers continue to use appropriate carrying, handling, and play techniques, this child should continue to make steady developmental progress.

Nursery School Strategies

Only recently have crack-exposed children reached the age to enter preschool or nursery school programs. Now that teachers are able to observe these children, they are beginning to identify some common problems related to crack exposure.

While there is some concern that teachers who are aware of prenatal crack exposure in a student may anticipate problems they might not otherwise identify, this does not seem to

be the case. Rather, the teachers more often seem to identify problem areas and needs before they know about the suspected or actual prenatal crack exposure.

Nursery school teachers who have had the first crack-exposed children in their classrooms describe these children as having problems with expressive language and language reasoning, having a short attention span, having problems with short-term memory, and often displaying unpredictable or inappropriate behavior patterns. The children also are described as having problems with social interactive behaviors and as being intolerant of new environments or tasks.

Disruptive behaviors by crack-exposed children present the greatest problems in the classroom. These behaviors include the tendency of some of the children to erupt suddenly into unpredictable episodes of aggressive or self-destructive activity. The children also are described as very distractable and having great difficulty in attending to classroom instructional activities.

Some of the children continue to need help for problems with fine and gross motor coordination. Teachers often report observing these children having difficulty picking up a pencil or grasping a crayon. Many of these children also have problems with balance and equilibrium.

However, all who work with crack-exposed children are most concerned about a more subtle problem, feared to be the most problematic over time—the suspected limitations in the learning ability and potential of this child. Revkin (1989) quotes Richard Wiggins, a neuroscientist at the West Virginia University Medical School, as saying,

> *...a child doesn't have to be in a wheelchair to have a birth defect. Whenever you limit a child's full potential, even by a small amount, that's going to have an effect on society—particularly when you multiply that by the thousands of women who are addicted to cocaine. (p. 68)*

Wiggins and others predict that we will not begin to see the most dramatic and important impact of crack exposure on these children until they are challenged by the tasks of learning and reasoning.

However, Chasnoff and the staff at NAPARE (Cronin, Ludtke & Willwerth, 1991) report some encouraging evidence of successful development in their study of 90 cocaine-exposed children. All of these children received intensive postnatal intervention. They were tested extensively at age 3 years, the age at which a child will usually enter a preschool program. Chasnoff reported that 90% of these children tested within the normal range for intelligence, 70% had no behavioral problems, and 60% did not appear to need speech therapy.

However, those figures mean that 10% of the children did not test within the normal range of intelligence, 30% do present behavioral problems, and 40% will need speech therapy. In addition, one must remember that the children represented in Chasnoff's study all received intensive postnatal intervention; thus, their outcome might be expected to reflect the maximum possible in normal development. Many more of these children will not receive intensive postnatal intervention, and they will come to the school from an environment of poverty, neglect, abuse, and deprivation.

Crack-exposed children, like neglected or abused children, will need a very structured learning environment. These children will require patient, one-on-one attention from teachers in order to achieve close to their maximum learning potential.

Linda Delapenha, Chair of the Drug Exposed Childrens' Committee in Tampa, Florida, presented a report to the NAPARE National Training Forum in Chicago in December 1990. This report provided a framework for teaching young children who have been prenatally exposed to drugs. In her report, Delapenha emphasized that, thus far, the best ideas for successful classroom management of crack-exposed children are found in existing early childhood education programs for

at-risk children and in such special education programs as the Early Recognition Intervention Network (ERIN) (Hains-worth, Hainsworth & Carrol, in press).

Delapenha emphasized the need for preschool teachers to pay special attention to the physical arrangement of the classroom. She also encouraged conference participants to plan carefully for ways to help the children with transitions that occur within the classroom during the school day.

According to Delapenha (1990), teachers should provide the following components within the classroom to meet the needs of drug-exposed children:

- A setting within which all classroom materials and equipment can be either removed or added to reduce stimuli or to enrich an activity
- An orderly, child-appropriate environment that can facilitate the efforts of the child to interact better with the environment and to develop self-organization skills.
- Particular attention to the child's initial experience with the classroom in order to provide a beginning environment that is more structured, constant, predictable, and clearly defined.

Delapenha also suggested the following ways in which the teacher might design the physical classroom environment so that the crack-exposed child might experience success:

- Divide the classroom into distinct interest centers having well-defined boundaries. These boundaries might consist of low shelves, furniture, or screens.
- Clearly define the spaces within the classroom. Ways in which this might be done include using masking tape to section off table tops, place mats, or carpet areas to define working spaces, and arranging furniture to clearly indicate work areas. A creative suggestion for designating a

movable activity boundary for each child is to provide hula hoops for the children.

- Use area signs that are both functional and decorative. Area signs use symbols that can help children associate specific behaviors with the activities and materials in a particular classroom space.

  These signs may be drawings or pictures of materials or activities that represent an area, such as a crayon to indicate the art area. Signs may be hung from the wall or ceiling or be placed in a stand on the floor or table.

- Use labels on classroom materials to link them to the area where they are stored or used. If the shelves and areas where the objects are stored or used also are labeled, the children will be much more able to help with clean-up activities.

- Place each child's name and picture (or symbol) on cards called "child signs." These cards are used to designate personal belongings and spaces within the classroom for each child.

- Clearly mark and define traffic patterns within the classroom. The teacher might use tape markers or footprints on the floor. The arrangement of the furniture also can demarcate traffic patterns.

- To avoid overstimulation for the children, the teacher should plan to have only the materials needed for the current activity out in the room. Materials should not all be out at any one time. The teacher should be sure that displays of children's work are reflective of current activities.

- Storage shelves should have doors or curtains to minimize the visual stimuli for the children. This is particularly important if the shelves provide a backdrop for teaching or other activities.

- Use cuing techniques to assist the children to learn to interact with the classroom environment in an orderly manner. Suggestions for cues include: footprints on the floor, directional arrows to indicate traffic patterns, and traffic lights to represent open or closed activity areas in the classroom.

Changes in routine or transitions from activity to activity present special difficulties for crack-exposed children. This is a problem common to all small children who do not know what to expect or what is expected of them, but it is a particular problem for special needs children. Suggestions for helping the children make transitions include:

- Plan as few transitions in the school day as possible.
- Plan to alternate active times with quiet times, and gradually increase or decrease the tempo of the transitional activity.
- Warn the children with a bell, light, or voice signal at 10 minutes, at 5 minutes, and at 1 minute before transition to a new activity.
- Before the children begin to move to a new activity, review with them what will happen during the transition time. It also may be helpful to do "dry runs" or practice the transition.
- Avoid situations in which the entire class lines up or goes to the bathroom or recess. Instead, split the class into halves, sending one group with an assistant or volunteer while the teacher works with the other half of the class in a group activity.
- Help the children to move to the next activity by singing a song or marching in step.
- Begin the new activity right on time, even if some of the children have not yet reached the new area. This helps the

children to learn to make the transition more efficiently in order not to miss any of the fun.

- Dismiss the children from large-group activities in small numbers at a time. Maybe the small groups could be "all boys wearing blue," or "all girls with long hair," or "all children at the red table."
- Most important of all, shower the children with positive reinforcement and praise when things go better or well!

The teacher also must remain continually alert to the need to intervene quickly for a child who indicates that the environment of activity has become overwhelming. For children who have been impacted by crack, it is important to intervene early into any escalation of an out-of-control condition.

One helpful suggestion for the teacher is to keep a behavioral log for each child. The teacher records behavioral triggers and early warning signs of losing control. Then, when a child displays these triggers or early warning signs, the teacher is better equipped to intervene promptly by providing additional support, structure, and guidance during high-stress tasks or experiences.

All of these suggestions and strategies can help to provide a classroom environment within which each child can benefit from the best skills of the teacher. If the crack-exposed child begins to learn how to cope with the complex preschool classroom environment, to interact better with his peers and with the adults in that environment, and to develop competencies that can negate some of the effects of the early abuse this child has suffered, the potential for this child to become more "normal" is surely enhanced.

PART FOUR

PREPARING THE SCHOOLS

CHAPTER 8

PHILOSOPHY AND APPROACHES

The specter of a generation of crack-exposed babies entering the public schools has caused panic and hysteria among some educators. According to the director of the Macon Piatt Counties Special Education District in Illinois, many even have contemplated retiring from teaching, announcing that they "would not be able to cope with these children." Others, fearing that crack-exposed children will require skills beyond the norm, state that "if I had wanted to teach special education, I would have worked on that degree" (HALL, 1991).

However, most educators, including Hall, reflect the more rational opinion that the problem of "crack babies" is overrated and has been sensationalized. Hall states that "the crack children are not much different from the nearly 30% of students who are already in the classroom, and who come to the schools out of environments of neglect, abuse and poverty" (1991).

Hall notes that crack-exposed children must be approached in the same manner as all other children: that is, through observation and evaluation, discovering the weaknesses of each child and implementing approaches for remediation. Also, Hall notes that it is imperative to discover the strengths of that child in order to amplify those strengths through education.

As this process is common to meeting the needs of all children, the needs of the crack-exposed babies may, in fact, not

present unmanageable problems for our educational system. Instead, as educators develop ways in which to adequately serve the needs of crack-exposed children, this process also will encourage the creation of changes in our entire educational system that we know are necessary to shape the schools of tomorrow.

In the year 2001, all children will need a world-class education that will prepare them not only to survive but to compete in a global society (Illinois State Board of Education, 1991). Therefore, educational leaders are challenged to create new ways to deliver knowledge and to give up "well-intentioned, deeply traditional, but flawed ideas about learning and teaching" (Sizer, 1991, p. 34). Crack-exposed children, due to their unique and still largely unknown needs, will surely hasten the urgency for this process to evolve.

In some communities, this process has already begun. For example, Illinois has identified a set of priorities that will be integral to the development of the long-term educational strategic plan. These priorities include:

- The need to change the way in which education is funded;
- The need to restructure the delivery of education to permit a focus on meeting the needs of all children;
- The need to provide students with a global perspective throughout their educational process;
- The need to make schools the focal point in an "umbrella approach" to the provision of services to children;
- The need to create partnerships between the schools and other key sectors of society, for example, business and industry, labor, parents, service agencies, and community organizations;
- The need to provide continuing professional development for educators; and

- The need to enable the schools to have increased autonomy coupled with increased accountability.

All of these priority areas for restructuring the schools proceed from the assumption that all children can learn and that schools must respect individual students' abilities (Illinois State Board of Education, 1991, p. 2). This assumption provides the foundation on which the education of each child, including the crack-exposed child, can be built.

Increasing numbers of students are coming to school unready to learn, not only because of crack, but because of problems within their families, problems within society (such as homelessness, poverty and cultural diversity), and problems within the child (including disabilities due to prenatal drug exposure). However, educators are determined that, while such problems do interfere with the central mission of the schools, the schools will not turn their backs on any of these children.

These assumptions can serve as a framework within which schools might plan for the education of crack-exposed infants and children in a positive, optimistic manner. The beginning of the creation of this framework will be grounded in some changes in educational philosophy as it relates to educational practice.

Educational Philosophy and Practice

Children who enter school without a diagnostic label, as will most crack-exposed children, do not simply "catch" a disability as one would catch a communicable disease. Instead, they will bring with them "unspecified cognitive, behavioral, linguistic, and affective characteristics developed over time, which interact with the academic and social ecology" (Cooper & Speece, 1990, p 124). According to the U.S. Department of Education (1988), this interaction will result in either school success or, for about 10% of children, failure and subsequent referral for special education.

Greer (1991) states that "more and more students are lurching through school out of control, [and]...are at risk of not developing their potential, and [of] not succeeding in school" (p. 390). According to Greer, we cannot permit this to continue. We need to provide each child with the skills with which he or she can live a productive life. To allow anything different implies "a society that is more than a little out of control" (Greer, 1991, p. 390).

Ironically, as at-risk children consistently differ from other children "along the critical variable: locus of control" (Greer, 1991, p. 390), these children feel that they lack any sense of mastery over their own lives. Greer suggests that, as a society, we must gain control for these students. Instead of continuing to permit students to move through the educational system without control and purpose, we must create an academic environment within which they are challenged, as are the students who are not considered to be at-risk.

To do less is to patronize the at-risk students and to indicate to them that they are different, that they are out of control, and that society does not trust them to reach their highest potential. Greer calls this "societal neglect" (1991, p. 391). The crack-exposed child already has had too much of that. Thus, Greer admonishes us to actively present a controlled educational environment to these children to enable them to learn to know what control and order are all about, not as abstract principles, but as a part of "perhaps the only functioning society these children ever see—the school" (1991, p. 391).

While we all readily admit that the public schools have an obligation to serve all children, in reality, there are barriers to the provision of appropriate education for many of them. As an example, Hall (1991) points out that the essence of Public Law (P.L.) 94-142 and its amendments is to mandate the schools to provide diagnostic and other services to special needs children without providing the funding with which to implement such services. These laws would appear to be applicable to many of

the crack-exposed children; but school districts are hesitant to label a child as having special needs within the definitions of these laws because it would force increased expenditures without mandated reimbursement.

Educational policy and legislative changes must occur to encourage and promote changes in practice. Unless this happens, it is possible that the majority of crack-exposed children, as well as other children who exhibit undesirable behavior in the school setting, will receive inadequate services "under the auspices of regular classroom programs, or special education services applied piecemeal or too late to be beneficial" (Nelson, Rutherford, Center & Walker, 1991, p. 411).

Most educational leaders believe that the overarching philosophy for the majority of school systems should be working to educate all children, including the drug-exposed child, within the general education program. Because fundamental changes in American family and community life make it difficult for the crack-exposed child, as well as many others of today's children, to learn the values that create a socially responsible citizen, some believe that the regular classroom teacher is the one person who is best prepared to create a "caring community...in which all children become contributing, valued members" (Schaps & Solomon, 1990, p. 38.).

Nelson et al. (1991) recommend major operational changes in educational practice to facilitate this concept. First, Nelson and his associates propose that it is an unacceptable practice to reduce decisions regarding the education of children to a diagnostic label based on the definitions written in law. They recommend that every school adopt systematic screening procedures to identify students who are at risk for behavioral or emotional problems very early in their school careers. These identification procedures must be accompanied by the development of appropriate intervention strategies. Nelson and his colleagues suggest that "early intervention through teacher consultation offers strategies for mobilizing the resources of

the regular education system to meet the needs of pupils before more intrusive and stigmatizing special education interventions are considered" (p. 412).

Individual intervention and education plans should be linked very closely with all other family intervention programs which exist in the larger community. That ensures the continuity of intervention. It also will require that the educational systems in our communities be an integral part of the strategic management plan for delivering services to crack-exposed children and their families.

It is very important that the regular classroom teachers receive professional preparation so they are able to manage these children with confidence and self-assurance. This preparation of the regular classroom teacher to assess, diagnose, and plan individual educational approaches for crack-exposed children can be accomplished efficiently through inservice programs.

Inservice programs for educators should include such topics as how to better understand the characteristics of these children, how to avoid or defuse aggressive confrontation, and how to protect themselves and the other children in the class.

Despite of barriers at all levels, there is hope! Outstanding teachers teach because they enjoy seeing children and because, at times, they see that they are making a difference in the quality of people's lives (Wigginton, 1985). These educators will remain optimistic, will steadfastly continue to believe that all children can successfully learn, and will believe that schools can control the conditions of that success.

Policy Change and Educational Research

Many researchers propose that policy change must follow research. However, when one really examines any major national policy changes, it becomes obvious that most policy decisions actually precede research. In fact, most policy changes that result in true societal change are based on the

values and beliefs of that society, not on research evidence. For example, the changes in national educational practice that occurred as a result of the enactment of Public Law 94-142 actually emerged from civil rights issues and had a constitutional, rather than a research, foundation (Keogh, 1990).

Because policy precedes research, researchers are cast in an even more crucial role, that of testing policy and evaluating the methods of policy implementation. Thus, social change is truly linked to social issues through research; and all people, including our children, are served while research is being conducted.

If we are to adequately meet the needs of crack-exposed children from this day forward, we will have to do so knowing that we are, in effect, writing the book! These children are present now; they need intervention and education now. Therefore, we need to simultaneously plan, change policy, and implement programs while we evaluate those program efforts.

Already, some school districts are implementing innovative learning environments, especially in attempts to better meet the needs of children of special concern, such as children of poverty, minority children, and children who are challenged in some way, as are many crack-exposed children. Some of these innovations involve the creation of model curricula to teach such issues as "social responsibility, environmental education, global telecommunications, student leadership development and conflict resolution" (Berman, 1991, p. 80). Other innovative educational formats focus on helping students to develop self-control, to internalize core helping values and to better understand social consciousness. These concepts are taught by exposing students to experiences that teach them about the interdependence necessary to forge solutions to real-world problems.

All of these efforts are experiments with comprehensive change. All, as they evolve, will become models for what we can do to change education. All will provide "experience [and]

research to make it easier for other schools and districts to initiate...[successful] programs" (Berman, 1991, p. 80).

The resulting educational system ultimately will include many innovative approaches, and many of those approaches will be evaluated as pilot programs before being implemented on a wider basis. Educational evaluation and research will need to be an integral part of the development of all such innovations.

New ways are needed to measure performance of individuals and to evaluate entire school districts. We may not have the luxury of solid empirical research before we need to implement and replicate change. However, we will need educational research to clarify and to measure the effectiveness of the changes we implement. We need research to affirm our successes or to indicate that a different approach is needed.

We need to develop a shared understanding of the urgent need to change. If we adopt this philosophy and approach, we surely will succeed in creating a better educational system for all children; and we also will meet the special needs of the crack children.

CHAPTER 9

CLASSROOM MANAGEMENT STRATEGIES

The imminent influx of crack-exposed children into the classrooms of America demands that policy, educational practice, and research be flexible. The actual problems these children will present may be different from those that are predicted. Flexibility is necessary to address the problems of each child with the greatest efficiency and success.

Schools are a critical part of the strategic management plan in any community. The public school system is the primary vehicle by which the community truly is able to prepare crack-exposed children to take their places in our society.

The regular classroom teacher is the key person in observing, assessing, and diagnosing problems presented by individual children. The classroom teacher is also the key person in the implementation of effective intervention and instructional remediation programs for each child. Therefore, community policies that establish early intervention for crack-exposed children also must provide appropriate preservice and inservice training for teachers. Such training programs, planned as a part of the continuum of care for crack-exposed children, are pivotal in assisting the schools to understand and to meet the needs of these children. Adequate support for teachers in regular classroom programs is crucial to success in meeting the

unknown problems that may be encountered with crack-exposed children

Similarities with the ADHD Child

As we review some of the characteristics shown by many crack children, it should be remembered that there are some essential similarities between this child and the child with attention deficit hyperactivity disorder (ADHD). It is interesting to note a very striking commonality present for both groups of children, that is, a family history of drug or alcohol use. This finding suggests that the behavioral characteristics similar for both groups of children may be largely the result of prenatal exposure to alcohol or crack.

Dr. Thana Singarajah and Dr. Stephen DeNagy have conducted extensive research into the characteristics and treatment strategies of the ADHD child. Singarajah and DeNagy currently provide comprehensive workshops for both educators and for physicians; these workshops deal with the recognition and diagnosis of ADHD and depression in children and with treatment and educational interventions for the ADHD and other non-compliant child. This unique alliance between Singarajah, who holds a Doctorate in Education, and DeNagy, a physician, has resulted in a very holistic approach to the treatment of such children. Such a holistic approach also can be used effectively to better understand and manage the crack-exposed child.

According to Singarajah, characteristics that may be observed in both the ADHD and the crack-exposed child are:

- Child often fidgets or squirms in seat.
- Child has difficulty remaining seated when asked to do so.
- Child is easily distracted by extraneous stimuli.
- Child has difficulty awaiting turns in games or in group settings.

- Child often blurts out answers before a question is complete.
- Child has difficulty following instructions.
- Child often shifts from one incomplete activity to another.
- Child has difficulty playing quietly.
- Child may talk excessively.
- Child often interrupts or intrudes on others.
- Child often does not seem to listen when spoken to.
- Child often loses things needed for assignments.
- Child often engages in physically dangerous activities.

Other characteristics that may also be quite common to both groups of children include visual and auditory perception disabilities, integration and memory disabilities, expressive language disabilities, and problems with gross motor control and coordination. Singarajah (1991) notes that the teacher may also observe distractibility, hyperactivity, and impulsivity, as well as immaturity, social disabilities, and performance inconsistency.

According to Singarajah (1991), there are many general strategies and interventions to help the ADHD child to have greater success in the classroom. Theoretically, these also will help the crack-exposed child who displays similar characteristics. Probably the most important strategy is for the teacher to provide a very large amount of structure and consistency in the classroom environment. Thus, the daily schedule and seating arrangements should remain the same every day. Any rules should be articulated clearly, as should be the consequences for a breach of rules. Limits should be firm and clearcut; however, discipline should never be embarrassing to the child and always should be accompanied with concrete suggestions for more appropriate behaviors.

If this child should require some isolation from the class to reduce extraneous distractions, the teacher might consider providing a screened area of the room for this purpose. In this area, the teacher would be able to segregate the child from the rest of the classroom environment as an earned privilege at scheduled times, not as a punishment for inappropriate behaviors.

To assist the child to learn to better manage new situations, the teacher is advised to prepare him or her in advance for the new task or event. However, even when prepared, if the new experience is complex, these children probably will need extra assistance, and time, to complete the new task.

The teacher should provide an environment filled with encouragement, praise, and affection. There should be frequent contacts between the children and the teacher and frequent feedback for the children regarding their performance. Of very great importance is that the teacher should be very consistent in rewarding effort, persistence, and desired behavioral outcomes.

These children are very easily discouraged; therefore, it is important first to give them responsibility for simple tasks at which they may have a greater chance of success and then gradually add more complex responsibilities. The teacher always should be careful to provide simple, clear instructions, given with adequate emotional warmth, support, and reinforcement. In addition, there should be frequent opportunity for small-group learning and social activities, because both the ADHD child and the crack-exposed child probably will have the most success in small group situations.

The teacher should pace the work and should provide for short "no-work periods," which the children may earn as a reward for good effort. The children also should have opportunities to participate in such activities as sharpening pencils, watering plants, feeding the class pet, or taking notes to the office.

The teacher should plan for stretch breaks or isometrics during the school day to provide physical activity opportunities for the entire class. The teacher also should be aware that the ADHD or crack-exposed child may have problems with coordination or auditory processing, which may cause the child to withdraw from the more noisy or more stimulating, recreational activities. If this child does withdraw from noisy activities, it may be a signal to further evaluate the motor or auditory skills of the child.

The combined, objective input of all appropriate persons is essential for the planning of a successful instructional program for these children. The teacher should communicate continuously with parents, if at all possible, and with such school support staff as the psychologist, social worker, or nurse. These support professionals also should assume some responsibility for communicating with the teacher regarding all children who present special needs. When this communication process is an ongoing dialogue, the teacher may find that the parents and other professionals often are able to offer objective and constructive suggestions for managing these children in classroom situations.

Classroom Instructional and Management Methods

It is essential that the teacher anticipate problems in order to create the proper learning environment for these children. The classroom teacher has the very complex task of matching the special needs of each child with the proper translation of broad educational guidelines. The teacher, working with all appropriate and available professional support, will determine the achievable goals, teaching methods, and strategies by which each child can acquire the knowledge and behaviors required to function effectively in our society.

This task is very complex because each child is different from any other child and, therefore, will respond differently to classroom activities or teaching approaches.

The teacher who understands developmental psychology and who is sensitive to the students' levels of development is much better able to understand and anticipate where the child is, as well as where the child is going. The teacher who understands where each child is functioning developmentally, and also what tasks are necessary for the child to move to the next level of development, thus can define an instructional program appropriate to meet the needs of each child.

Teachers of crack-exposed children must use their knowledge of developmental processes and levels to design instructional programs that address individual needs as well as the required global and foundational learning tasks.

The Swiss developmentalist Jean Piaget (1896-1980) has provided a perspective on the cognitive development of children that can assist the teacher who is confronted by the unique needs of the crack-exposed child. Teachers of all special needs children could benefit greatly from a review of Piaget's theory.

Piaget described four periods of development and defined approximate age ranges for each of them. These developmental periods are:

- The sensorimotor period from 0-2 years of age.
- The preoperational period from 2-6 years.
- The concrete operational period from 6-12 years.
- The formal operational period from 12 years on.

According to Piaget, the child acquires knowledge gradually and sequentially as he or she moves through these developmental periods, or stages (Rosser & Nicholson, 1984).

Piaget theorizes that the child achieves specific accomplishments in each of the periods, which prepare him or her to move on to the next period of intellectual challenges. Piaget is quite non-negotiable in his position, that "development thus

progresses in a fixed order; stages cannot be skipped, and the order cannot be altered" (Rosser & Nicholson, 1984, p. 216). The position that children develop in predictable ways should give great encouragement and foundational stability to the educator who implements it in curriculum development.

The first three periods described by Piaget, the sensorimotor, the preoperational, and the concrete operational, are those which are pertinent for purposes of understanding the educational needs of the crack-exposed child. This assumption is based on the primary goal of this publication to assist the early elementary teacher to be better able to assess the developmental skills of the crack-exposed child and, subsequently, to prescribe the most appropriate instructional strategies for that child. The crack-exposed child entering the school is chronologically from 4 to 7 years of age, but that child may fall below the age of 4 years developmentally. However, the educator can use Piagetian theory to assess and plan for children who are less impaired.

According to Piaget (1954), the major task faced by the baby in the sensorimotor period is to discover some basic information about his or her environment. The critical concept that the baby acquires during this period is called object permanence. To acquire the concept of object permanence, the baby learns:

1. that he or she lives in a world of objects;
2. that he or she, too, is an object in the world;
3. that physical objects have an existence independent of the baby; and
4. that there are relationships between objects, and between action and objects. (Rosser & Nicholson, 1984, p. 221)

The baby acquires the concept of object permanence through the manipulation of objects within the environment. He or she learns that objects not only exist separately from the

baby, but also continue to exist, even when hidden from view. The normal baby, by grasping, sucking, holding, throwing, and otherwise manipulating an object, arrives at an important developmental benchmark, the attainment of object permanence.

As we noted previously, some crack-exposed children on reaching the age of 5 or 6 years, the age at which they may enter the elementary classroom, still are observed to have difficulty grasping items, labeling items, or using items appropriately. Therefore, the teacher will need to include activities that assist the child in achieving the necessary concepts of the sensorimotor period. Children must achieve these concepts before they can be expected to function at the next developmental level, the preoperational period, which is observable in most first-grade children.

According to Piaget, the preoperational child continues to fail to demonstrate a knowledge of identity and equivalence conservation, class membership, and spatial relations (Inhelder & Piaget, 1964; Piaget & Inhelder, 1956). In other words, even though normal children at this age may be physically quite accomplished and display proficient verbal skills, they still have serious misconceptions about the world around them. The teacher will want to design instructional activities that provide preoperational children with real experience with real objects. Such activities will help preoperational children to construct and understand concepts about the qualities of objects in their environment.

Many 6-year-old children are beginning to function developmentally in the concrete operational stage described by Piaget. A few crack-exposed children also may be functioning at this level on entering school. However, many more will require assistance and structure within the classroom to move successfully through the earlier Piagetian developmental periods to the concrete operational stage.

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The concrete operational child (approximately 6 to 12 years of age), is able to use some of the tools of adult logic, to solve increasingly complex problems, and to give logical explanations for those solutions. Thus, these children can solve logical problems using concrete objects. However, they are unable to do so using abstract symbols.

For the concrete operational child, problem solving and logical thinking still must be based in concrete reality. For example, as algebra represents in abstract terms the same operations that children are able to associate only with numbers (concrete references to objects, i.e., two chairs), the concrete operational child is unable to learn algebra.

In planning to meet the sometimes unique needs of the crack-exposed child, it is important to continuously consider and assess three specific aspects of the development of this child. These developmental areas, each centrally relevant to the success of the educational process, are behavior, cognition, and language. Of these three developmental areas, teachers initially are most concerned with any behaviors that will disrupt the classroom, including aggressive acts.

Every teacher wants to create an environment within the classroom that will facilitate learning for all students. Some tools that can help in achieving this goal are found in behavioral principles. Using these principles, the teacher is able to assist the students to gain new and adaptive behaviors while they gradually abandon maladaptive behaviors.

The teacher needs to clearly define the expected appropriate, as well as unacceptable, behaviors. In addition to clearly defining these behaviors, the teacher should plan ways in which unnecessary punishment is avoided, reducing it to a level that is just sufficient to reduce or terminate an inappropriate behavior.

As noted previously, the teacher should carefully plan the physical classroom environment in such a way that the struc-

ture within the room can assist the crack-exposed child to self-manage any problems which he or she might encounter with distractibility, attention span, and behavior. Thus, the classroom should be consistently orderly. There should be distinct boundaries for each instructional interest area, labels for objects, signs to identify classroom sections, and personal items and spaces for each child (Delapenha, 1990). Specific suggestions by Delapenha are listed on pages 114-117 in the previous chapter.

Delapenha also suggests ways to further assist the crack-exposed child to acquire self-control in nursery school and early elementary classrooms. These strategies include consideration of the best place to locate the desks of crack-exposed children and ways to integrate those children into the classroom activities without overwhelming them.

One strategy is to seat the child in an area of the classroom where distractions are minimized and teacher control of the child is enhanced. In the nursery school, the child's desk might be located very near to the teacher's desk but off to the side of the classroom, where distractions may be better controlled. Such proximity to the teacher will permit more rapid attention to the child when required and more opportunity for the teacher to provide positive feedback to this child. It also might limit distractions that would interfere with the child's attention span and ability to remain on task.

The teacher may find that the crack-exposed child is able to work more successfully in small-group activities. In small groups, the teacher can provide the crack child with good peer role models. A cooperative-learning, small-group environment may greatly facilitate success in school not only for the crack-exposed child but also for his or her peers.

According to Chasnoff (1991), some crack-exposed children may enter school with deficits in language development. The normal child who enters school is generally quite skilled verbally and has a fairly extensive vocabulary. Also, the normal

first-grade student is able to communicate using fairly complex sentences (Rosser & Nicholson, 1984). However, the first teachers to instruct known crack-exposed children are reporting that some of these children are unable to communicate in sentences, and some are able to utter only a few single words. Therefore, it is very important that the teacher of the crack-exposed child, as well as other children who display language deficits, not only model appropriate language but also help these children acquire language skills by helping them to experience the necessary objects or phenomena (Dodd, 1980).

According to Dodd, in order for a word to have meaning for any child, the child must be able to establish cognitively a relationship between an object or event and the word that represents it. Thus, any activity in the classroom in which the children are able to feel, see, or experience an object will enhance the development of language skills for the children.

The crack-exposed child, who may have more than the normal difficulty in both processing and in communicating language, may be assisted to acquire verbal skills if the teacher will provide varied and multiple opportunities to experience language-rich activities. This child must be given many opportunities to verbalize and to interact verbally with peers, as well as with the teacher. Also, the child must be reinforced positively and consistently for these interactions (Carroll, Rosenthal & Brysh, 1972).

In addition to being concerned that the crack-exposed child acquire behaviors and language skills that will permit academic and social success, the teacher also is concerned that the child make steady progress with the development of cognitive skills. While consideration of individual differences between children is important to the acquisition of appropriate behavioral and language skills, individual differences in cognitive abilities may require that the teacher adapt the school setting in accord with the crack child's unique needs. Such adaptation or adjustment will mean individualizing instruc-

tion for each child while continuing to teach to the needs of the larger group of students within the classroom.

According to Rosser and Nicholson (1984), no single method of adjusting educational programs to allow for individual differences has proven effective for all students. Therefore, teachers are advised to incorporate a broad combination of creative approaches and practices in their instructional program plan.

As the crack-exposed child is similar to the ADHD child in many ways, the teacher may have more success in managing the crack-exposed child by using methods known to be successful in managing the ADHD child (Singarajah, 1991). Varied sensory educational approaches are necessary for successfully teaching for both of these groups of special needs children. However, the teacher is cautioned to avoid instructional approaches that incorporate too many different stimuli at any one time, which may prove too overwhelming for crack-exposed children.

The teacher of the crack-exposed child should give special attention to both the programming and the instruction of academic tasks. Also, the teacher needs to plan to give priority to tasks that encourage communication between the student and teacher and that enhance opportunities for appropriate management of behaviors (Singarajah, 1991).

Suggestions for improving the communication level between compromised children and the teacher include:

- providing cues to gain student attention before giving any instructions;
- acquiring and maintaining eye contact and, if necessary, holding the child's face between your hands and looking directly into his eyes;
- using language that is very specific in order to give directions in a brief manner;

- avoiding the use of directions that require multiple behaviors or a sequence of acts;
- continuing to maintain eye contact with the student for several seconds after giving a direction to ensure that the child understood and can comply;
- asking the child to restate the direction if he or she fails to comply;
- if needed, working to discover appropriate effort of performance and praising the specific appropriate behavior you wish to recognize; and
- using higher rates of praise than reprimands.

Some tips for ensuring more successful instructions, as well as performance, on academic tasks for the crack-exposed child include:

- Try to ensure a very high success rate. The teacher should work for a 90% success rate during direct instruction tasks and 95% for tasks during independent practice.
- Maximize instructional time by using direct instruction in educational situations and permitting adequate cuing, a high rate of student response, and immediate feedback about performance and correction of errors.
- Provide concrete models and examples of a skill that is modeled by the teacher in association with verbal instructions.
- Emphasize accuracy rather than volume of work. Break tasks into parts to assist the student to gain organizational and self-management skills.
- Use a timer to help the student set time limits for an assignment. The student can work to beat the timer in completing the task.

- Reduce frustrating or tedious tasks that require sustained attention, and which the child has not mastered. A common example of such a task is copying work from the board. This kind of task should happen only on an infrequent basis.

To summarize, the teacher must create the proper learning environment within which distractions are controlled and encouragement of appropriate behaviors is provided. Also, the teacher must attend specifically to communication with the crack-exposed child, paying very close attention to gaining and maintaining eye contact while providing directions to the child. All directions and instructions must be clear and concise, and the teacher must make certain that each child fully comprehends the directions before beginning work on any assigned task.

In order to provide the maximum in successful classroom management for the crack-exposed child, the learning environment must be very structured and have clearly established routines and articulated rules. These rules must be consistently enforced using encouragement and immediate reinforcement. All use of ridicule and criticism must be avoided.

The primary goal for the teacher of these children is to help them to gain and retain control over their environment, and over interactions with peers and adults within that environment. The classroom within which the child can attain a sense of achievement, success, and belonging will provide that child with the motivation to work harder at gaining success over any disability they may have.

All children, including crack-exposed children, must learn the rules and acceptable behaviors in our society. In general, these rules are learned in the classroom. Thus, while intellectual achievement is an expected product of formal schooling, the skills by which the child is able to interact with, cooperate with, and understand others also are important outcomes of the educational process.

The teacher who helps all children in the classroom, including those with unique needs, to gain both social and academic skills, will help each child to become a functioning adult in our society. Even the crack-exposed child can learn to take an active role in the social environment and, finally, to believe that he or she is a valued member of that society (Schaps & Solomon, 1990).

The Regular Education Initiative

C. Hall (1991), the director of the Macon Piatt Counties Special Education District in Illinois, said that the most realistic way to provide adequate education to crack-exposed children today is to give sufficient support to the regular classroom teacher to enable keeping these children in the mainstream of education and out of special education. One thoughtful concept through which this goal might be facilitated is the Regular Education Initiative (REI) (Jenkins, Pious & Jewell, 1990).

Under the REI, individual teachers are charged with the primary responsibility for educating all students assigned to their classrooms, to make and monitor major instructional decisions for those children, and to provide instruction that follows a normal developmental curriculum. The regular classroom teacher is charged to manage instruction for a diverse population of students and to coordinate assistance for students who require more intense services than those provided to other students (Jenkins, Pious & Jewell, 1990).

The REI calls for a partnership between regular education and necessary specialized services, a partnership in which the regular classroom teacher retains the primary control of the instruction within his or her classroom. However, it does not call for the consolidation of special education in regular education (Lieberman, 1990, p. 561).

There is an alternative, and rather radical, interpretation of the REI concept that argues that all children, regardless of

their needs, should be fully mainstreamed into the regular classroom, thus minimizing the role of the special educator. This interpretation ignores the very significant positive impact that special educators have had on the lives of children with disabilities and special needs. The special educator is very important in the partnership through which children are assessed and programs specific to each child are implemented. The crack-exposed child needs the community environment that is found in the regular classroom and must learn to interact with his peers in that setting. But the crack-exposed child also needs the expertise of both the special educator and the classroom teacher in order to receive the best education specific to his unique needs.

Our educational system must move rapidly toward the partnership between special education and the regular classroom on behalf of crack-exposed children. The predicted numbers of these children and their feared disabilities make it impossible for us to look only to special educators, using only prescribed interventions in segregated classrooms, or only to unsupported regular classroom teachers to meet the needs of these children.

The appearance of the crack-exposed children in elementary schools forces educational systems to use the expertise of both special and regular educators in new and different ways. If we place crack-exposed children in the special education classrooms, we will only cause an already overloaded special education system to be less able to serve the children. Alternatively, if we place these children in the regular classroom without providing specialized support to regular teachers, the regular classrooms will be completely overwhelmed.

We need to stop being so concerned with labels for children and with arguments for, or against, the importance of various members of the educational team. Education is in need of new instructional options, and a shared responsibility for all students.

Instead, we need to concern ourselves with providing for each child. We need to "adapt the regular classroom to make it possible for every child to learn in that environment" (Will, 1986 cited in Algozzine, Maheady, Sacca, O'Shea & O'Shea, 1990, p. 555). We need to encourage true coalition between special education and regular education.

Will (1986), has stated:

> *The basic educational issue for serving this growing group of young people is not finding something to call them so we can put money in a pot with that label on it. The basic issue is providing an educational program that will allow them to learn better.*
>
> *From that point, we can construct an educational environment that is a broad and rich continuum, rather than a series of discrete programming slots and funding pots. Within that range of available services, we can then pick and choose what we need to construct the program the child needs. We can deliver the resources and provide the personalized instruction each child must have to achieve to his or her greatest potential. In short, we need to visualize a system that will bring the program to the child rather than one that brings the child to the program (p. 556).*

Educators of both systems must put aside arguments against serving children together. They must work together in positive, optimistic ways to attack the problems that the crack-exposed children will present. The luxury of time is past. The need to act, to share our best in expertise and technology, is now!

Collaboration and Consultation

Shared educational responsibility is not a new concept. Historically, at least on paper, there has long been an expectation that special needs children are the shared responsibility of the regular classroom teacher and of resource educators.

Jenkins, Pious and Jewell have described some service-delivery models that "strengthen the capacity of general education to deal with student diversity" (1990, p. 487). These models clearly reflect and embody the REI concept. Some of these models already may be in place in individual schools. In meeting the special needs of crack-exposed children, it is not important what name we give the educational partnership by which those needs are met. What is important is that the best of varied educational disciplines are joined in the planning and implementation of instruction for the children.

Jenkins, Pious, and Jewell (1991) describe two types of successful education models. The first is consultation models, the second is direct-service models.

Consultation models are based on the collaboration of classroom teachers and specialists in planning instruction for special needs students. While consultation models are designed to empower regular educators to manage student diversity in non-traditional ways, these models also are based on shared responsibility for special student needs.

Examples of consultation models are pre-referral intervention programs, including Teacher Assistance Teams (Chalfant, Pysh & Moultrie, 1979) and Mainstream Assistance Teams (Fuchs et al., 1989). Jenkins, et al. (1991) also include consultant teacher programs as a type of consultation model. Examples of consultant teacher programs include the Consulting Teacher (Egner & Lates, 1975; McKenzie, 1972) and the Resource/Consulting Teacher (Idol-Maestas, 1981). Direct-service models have been developed to enable the instruction of special and remedial education students in the regular classroom. In these models, the regular classroom teacher is supported by special education professionals or paraprofessionals but remains responsible for all decisions relating to the programs for special needs students.

Some direct-service models are the Adaptive Learning Environments Model (Wang, Gennari & Waxman, 1985), the

Co-Teaching/Team Teaching Model (Budoff, 1988), and the Integrated Classroom Model (Affleck, Madge, Adams & Lowenbraun, 1988). The differences between these models and traditional approaches to meeting the varied educational requirements of special needs children include both the locus of control of the program and the location in which the instructional service is provided.

Although the names are different, the underlying concepts in all of these models are consistent. They demonstrate that educators, for a very long time, have been articulating the need for various educational sectors to collaborate to teach children and, as much as possible, to do so within the regular classroom.

Historically, collaborative and consulting teachers may not have been totally effective. This often has been due primarily to the regular education teacher not really knowing how to utilize this expertise (Hall, 1991). This negative history, which continues today, may cause some regular teachers to be hesitant to enter into an alliance with a consulting teacher.

We need to re-examine both the preparation that consulting teachers receive to enter the regular classroom environment and the preparation that regular teachers receive to accept this collaborative resource. Specific preparation will help the consulting teacher to be more effective in conveying information to the teacher who is responsible for working with the special needs child in the regular classroom. Specific preparation also will assist the regular classroom teacher to understand how a collaborative approach can function. Consulting teachers need to learn be sensitive and respectful when working with regular classroom teachers, and those regular classroom teachers need to listen to the consulting teacher and to merge the best expertise of both, without feeling threatened or defensive. If both partners are able to enter into a strong coalition on behalf of children, and if both are taught how to understand better the role of all professional

educators, teaching will strengthen, education will improve, and all children will benefit.

We need to develop working partnerships on behalf of crack-exposed children. The groundwork has been laid; we need to go forward without further ado. Children impacted by maternal crack abuse are here; they will not go away. They need to receive the very best quality of education it is possible for them to receive. Nothing else will work. Nothing else will prepare these children to assume their responsible role in society.

Society must work in partnership with the schools to help each student develop their sense of how they, as individuals, can make a difference in the world (Berman, 1990). Schools now are beginning to focus on making social responsibility for all students a core element of the academic culture. If educators can anticipate the special needs of all children and can successfully manage those needs for instruction, even the crack-exposed children can develop a consciousness of self and society. As this occurs, our classrooms will become a community within which even this child can contribute and can eventually learn that he or she can make a difference in our world.

We have every confidence that communities and schools will cooperate to address the needs of the crack-exposed children with innovation, with courage, and with the determination that these children will:

> *...hold a positive vision of the future—to believe that we can do better, live better, be kinder, and be fairer. Students need our help if they are to develop confidence to participate in creating a more peaceful, just, and ecologically sound world. Teaching is our vehicle for making a difference...[and] this vision offers all of us an occasion for seeing our work as part of the world we hope to create. (Berman, 1990, p.80)*

Let us get started, let us begin, let us resolve to give the best of our present store of knowledge while we await empirical confirmation of our observations and efforts. Let us see the

crack children as our motivation for increasing our focus on all of our special needs children, and for accomplishing the needed reform in our educational systems. Let us accept the challenge these children provide. Let us use that challenge to create a better world for all of our children and families!

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